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ABSTRACT

This research project examined the potential role of agricultural experiences as a vehicle for meeting the diverse learning needs of rural primary students in developing countries. Volume 1 of the project report represents a literature review that investigated a "new role" for agriculture as a key element for developing rural students' basic skills of literacy and numeracy. Volume 2, the second phase of the project, involved case studies of four developing countries in which contextualization of learning and teaching is supported by educational policy and practice. Contextualization of learning occurs when curriculum content and the methods and materials associated with it are directly related to the experiences and environment of the learner. The literature review concludes that serious problems affect the provision and effectiveness of primary schooling in developing countries, particularly in rural areas; that the curriculum in rural primary schools in developing countries is centralized, inflexible, and geared toward an urban middle-class context; that the contextualization of teaching and learning has the potential to strengthen links among the learning environments of school, home, and community; and that agriculture may act as a unifying theme for curricula relevant to rural primary students. Implications for educational practice in the use of agriculture as a contextualizing medium for instruction are discussed relevant to language, science, mathematics, social studies, nutrition, and health instruction. Examples of the integrated approach to curriculum development, which in some cases involved contextualization of teaching and learning, are provided for the following countries: Malaysia, Uganda, Cameroon, Jordan, Papua New Guinea, Sri Lanka, Tanzania, Brazil, Kenya, India, Colombia, Ethiopia, Zambia, and Guatemala. (Contains 147 references and numerous data tables and photographs.) (LP)

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ED 461 443

# Contextualising Teaching and Learning in Rural Primary Schools: Using Agricultural Experience.

## Volume 1

## [and]

## Volume 2.

## Education Research

Peter Taylor
Abigail Mulhall

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EDUCATION RESEARCH

# CONTEXTUALISING TEACHING AND LEARNING IN RURAL PRIMARY SCHOOLS:

## USING AGRICULTURAL EXPERIENCE

VOLUME 1

Serial No. 20

Peter Taylor and Abigail Mulhall

Department for International Development

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May 1997

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# DEPARTMENT FOR INTERNATIONAL DEVELOPMENT

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## List of Acronyms

| | |
|---|---|
| ALPS | Active Learning through Professional Support Project |
| APPEP | Andhra Pradesh Primary Education Project |
| BEIRD | Basic Education Integrated into Rural Development |
| CAPE | Comprehensive Access to Primary Education |
| DfID | Department for International Development (formerly ODA) |
| EDURURAL | Northeast Basic Education Project |
| EFA | Education For All |
| EVAs | Emotions-Values-Aesthetics |
| GER | Gross Enrolment Ratio |
| GNP | Gross National Product |
| ICDR | Institute of Curriculum Development and Research |
| INSET | In-service Education and Training |
| NER | Net Enrolment Ratio |
| NGOs | Non-Governmental Organisations |
| NIE | National Institute of Education |
| OECD | Organisation for Economic Co-operation and Development |
| PEAP | Primary Education Assistance Project |
| PECR | Primary Education Curriculum Renewal |
| PROAP | (UNESCO) Principal Regional Office for Asia and the Pacific |
| PSA | Primary Schools Agriculture |
| PSEDP | Plantation Sector Education Development Programme |
| RPSs | Rural Primary Schools |
| SHAPE | Self-Help Action Plan for Education |
| SIMAC | National System of Human Resources Improvement and Curriculum Adaptation |
| SKP | Shilsha Karmi Project |
| TTI | Teacher Training Institute |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| UNICEF | United National Children's Fund |

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# 1 Executive Summary

1. The purpose of this research was to examine the role of agricultural experience as a vehicle which can support the development of learners in rural primary schools whose needs are extremely diverse, and whose life experience has been enriched by agricultural practice. This involved a review of literature which sought to investigate a "new role" for agriculture as a key element of primary schooling. In particular it examined from a conceptual point of view, and through the use of case studies from the literature, the capacity of agriculture to act as a familiar vehicle for the development of young rural learners' basic skills of literacy; numeracy, and other life skills which are perceived as necessary for a fruitful and productive life. The intention was not to explore issues relating to teaching agriculture as a distinct subject area in the curriculum.

   In addition, case studies were carried out in four countries, Tanzania, Sri Lanka, India and Ethiopia. These countries were selected because of evidence that government policy was supportive of the concept of contextualisation, even though this might not be stated explicitly. Also, in each country, a co-researcher was identified who had published work, or had some expertise, relating to the basic ideas underlying the concepts of contextualised teaching and learning, and their contributions became a key element in this research project.

2. Primary school education in developing countries is considered of great importance because of its wide range of benefits. These include the shaping and strengthening of the child as an individual in relation to his or her fellow people, to nature, and to the world as an environment. Primary schooling is thought also to build a capacity for life-long learning in individuals, and to develop knowledge, skills and attitudes which will contribute to the general development of the community in which individuals live by meeting manpower needs and improving community life.

3. Although most countries in the world have set themselves the goal of achieving universal primary education, and despite high investment, studies reveal low participation, high drop-out rates and under-education of pupils in many cases. This is due to constraints which include inadequate necessary inputs, a lack of facilitating conditions and an absence of the will to act.

4. Rural primary schools face particular disadvantages, some of which stem from national educational programmes which are geared more closely to an urban context. High drop-out rates are common; these are due to pupil-related, school-related, constructed or macro-system factors. Although some generalisations can be made, research shows that the constraints depend on the specific environment in which a school is located. Efforts have been made to address these problems by reviewing teacher training programmes, introducing curriculum reform and developing new approaches to school organisation, but these changes tend to be piecemeal.

5. Curriculum reform has been attempted as a means of dealing with the problems faced by schools in many rural areas. Different approaches to curriculum development have been tried, including the introduction of academic and community-based models, and curricula which are integrated and topic-based.

6. It is suggested that contextualisation of teaching and learning can strengthen the links between the learning environments of school, home and community. This can be achieved by building on pupils' experience from outside the school and providing additional experience within the school programme. This process is enhanced through the use of metaphors and analogies, which allow children to integrate their own learning experiences. Agriculture may act as a unifying theme in order to achieve this.

7. The curriculum should not be distinctly, rigidly different, or indeed identical, for urban and rural primary schools, but should be flexible, allowing teachers to develop their own material

which reflects the local environment, whether urban or rural. This approach emphasises the process of learning, rather than purely its content. Agriculture could provide an avenue through which children can have repeated experiences which help them to master cognitive, physical and social skills. Agriculture could be the basis of integrated projects incorporated in the school curriculum, with academic activities chosen for their locally relevant, experimental attributes. Since every curricular subject is important to the development of children, it should be possible to build upon children's knowledge of agriculture and link this to each part of the curriculum.

8. A flexible method of teaching is an extension to natural teaching which takes place outside the school. It can build on a child's experiences, covering the whole curriculum whilst developing skills in a meaningful context, as opposed to breaking learning down into categories by subject area, which is less natural, more forced, and less interesting or exciting.

9. One impact brought about by this approach is to decrease the size of the teacher's exclusive territory, with a subsequent increase in the amount of input children have into designing their environment. In order to enhance this process, other types of inputs would be of great importance, for example, the preparation of special materials, such as workcards, worksheets, additional pictorial or taped material, guides on the use of audio-visual materials, materials information and reference books which are easy to read in a language of instruction familiar to the children, whilst introducing novel terms in a suitably paced way.

10. A great advantage of this approach to rural primary education is that it allows the curriculum to be made relevant to the experience of the learners, whilst still allowing the possibility for the development of knowledge, attitudes and skills identified on a national basis. This avoids the rural curriculum being perceived as an inferior version of the urban curriculum. A major disadvantage is that its success depends largely on the skill of teachers and the availability of suitable resources. Also, the experience, culture and "knowledge" of people who live in rural areas varies from one locality to the next; equally, within a specific area the knowledge and experience of individuals differs markedly. There is no single knowledge or experience which can be used as the basis for the curriculum. Metaphors and analogies should, if they are to be effective, be derived actively by the child, based on his or her individual experience. This makes it extremely difficult to develop rigid "relevant" primary education programmes on a national scale, and instead suggests that flexibility in terms of local development of curricula will become an important feature. This will need to involve a range of stakeholders, not only school representatives and other government personnel, but also community members, and of course the children themselves as they actively contribute to the learning process.

11. Curriculum planners at national level can deal with the difficulties posed by variations in "local knowledge" by identifying unifying themes which can provide a direct link to the experience of most or all of the learners in a particular area, and can also be readily adapted through participative processes to fit each local situation. Agriculture is one activity with which the majority of children in rural areas of the developing world are familiar, and so it has an important role to play here; it can contribute to teaching and learning of languages, science, mathematics, food, nutrition, health and social studies.

12. Examples of countries where an integrated approach to curriculum development has been carried out, and which in some cases have involved the contextualisation of teaching and learning, are Malaysia, Uganda, Cameroon, Jordan, Papua New Guinea, Sri Lanka, Tanzania, Brazil, Kenya, India, Colombia, Ethiopia, Zambia and Guatemala.

13. Lessons learned from these examples show that different approaches to integration have been attempted, and that design and implementation of curricula vary considerably. Successful implementation of the curriculum depends on many factors, including those related to teaching practice and support, resources, community-school relations, examination systems, and government policy and support. Curriculum reform is not enough on its own; it must be accompanied by complementary social and economic reforms. The examples reveal that some teachers have attempted to use the environment in teaching-learning situations, thus enabling children to appreciate and understand the world around them. In rural areas,

therefore, agriculture could provide a unifying theme, since it is familiar to the lives of most rural children.

14. The case studies carried out for this research study (discussed in detail in Volume II of this report) have revealed that the idea of contextualisation, although a new concept for most people, is a popular one. During the field work there was frequent mention of the need to make the school learning environment of pupils more relevant to their every day learning experiences, both within and outside the school, especially in rural areas. Evidence from the field research reveals that many teachers do attempt to contextualise learning, especially where examples may relate to the home environment, for example agriculture and nutrition.

15. The development of alternative and innovative strategies for teaching and learning increases the demands on teachers. It is important to be aware that many teachers carry a very heavy burden already; not only do they work under difficult conditions, often with large numbers of pupils, but they have to perform many activities relating to the social welfare of children in the school which go far beyond what is often thought to be the normal duties of a teacher. Ways of supporting teachers, both materially and psychologically, will have to be found which enable and encourage them to develop new strategies and approaches without becoming completely demoralised and exhausted in the process.

16. A number of important issues have emerged from the research:

- Contextualisation is not mentioned explicitly in national policy documents, but the underlying concepts appear to be appreciated and approved. In most situations where there is flexibility in the curriculum to make it relevant to the local environment, teachers do no have the support or infrastructure at local level to enable them to put policy into practice;
- Teaching aids and materials, particularly those which relate to the local context, are often in short supply. Small classrooms with large numbers of pupils make practical teaching and evaluation of learning difficult. Physical constraints in the classrooms and an absence of regular professional support lead to low motivation levels amongst teachers and pupils;
- Teachers with little or no knowledge of agriculture, and a lack of land at the school, may be constraining factors to the use of agricultural examples in the teaching of other subject areas. Cultural and societal values may work against contextualisation when asking pupils to talk about their experiences openly;
- In rural schools, agricultural experience and materials from the local environment are utilised by some teachers as a basis for teaching and learning. Farming themes are frequently used as a basis for language teaching, and agricultural topics and examples appear in many school textbooks;
- Donor support, or recognition of a school as a "model" or "pilot" school appears to raise the prestige of the school in the locality. This in turn seems to be a motivating factor for teachers and pupils, and encourages parents and community members to be more supportive of the school in its activities;
- The influence of the headteacher in a school seems central to the development and use of innovative teaching practices. Where a collegial atmosphere is created, and staff of a school feel that they can discuss freely problems and complex situations with each other regardless of position in the school hierarchy, experimentation and innovation has an opportunity to flourish;
- Support from the local education authority is also important. In some cases, schools inspectors discourage teachers from attempting to use alternative methods of teaching and learning for fear that the situation might go out of control. Although national policy statements favour the use of contextualisation in schools, teachers' guides do not seem to reflect this, and so teachers feel wary about moving away from what is laid down on the printed page, even though they may be surrounded by rich and varied resources outside the classroom and school environment. The rigidity of many primary school curricula discourages teachers from moving beyond the boundaries of the subject area, and frequent curriculum changes leave teachers feeling that they have enough to cope with just to cover the subject matter. Large class sizes, shortage of time, and a lack of confidence in dealing with classroom organisation

all contribute to teachers feeling that they cannot move easily beyond the use of traditional talk-based teaching;

- Parents in rural communities, where there are low levels of literacy, seem to find it easier to understand what their children are learning when it is based in a context with which the parents themselves are familiar, for example agriculture;
- Contextualised teaching and learning may enable both girls and boys to learn more effectively at school, thus increasing the numbers of girls who leave school with higher levels of achievement and qualifications than at present. In turn this may result in greater numbers of female teachers, and also more women with a more positive perception of schooling, therefore encouraging more girls to attend school;
- Contextualising learning through the use of agriculture may help to break down the barriers between the different learning environments (home, school, community) and thus create a context more conducive to learning. Care must be taken where strong views are held about home and family life as an acceptable topic for discussion in school;
- Contextualisation strategies adopted by schools may be viewed by parents as a means of "watering-down" the national curriculum, thus preventing children from taking and passing examinations and acquiring a fully-recognised qualification, impeding their chances in gaining employment or progressing to higher levels of the education system. Such a view could lead to parents withholding their children from primary school; hence there is a need to raise awareness that contextualisation can enhance the possibility for children to pursue and attain a wide range of goals in life;
- Regardless of changes in the curriculum which aim to relate learning more closely to the local environment, economic and social constraints in rural areas deter many of the poorest families from sending their children to school. More far-reaching structural changes may also become necessary, such as adapting the school year of rural schools to fit more closely with the agricultural cycle, so that children who are expected to participate in agricultural activities will be able to do so without missing out on schooling.

17. Opportunities exist for further research into:

    - The development of educational practices which value and take into account the knowledge, experience and culture of members of schools and the wider community;
    - Training and support programmes required for teachers in primary schools and in the local community, to enable them to base strategies for teaching and learning on a process of contextualisation;
    - The development of structures and functions in schools and training organisations which complement and support the process of contextualisation, such as alternative timings of the school year to fit in more closely with the needs and requirements of parents and their children;
    - The effect of contextualisation strategies on parental opinion of the value of schooling.

This report shows that many teachers, schools and policy makers have demonstrated the willingness and ability to innovate in order to create the most effective learning environment for children in primary schools. Considering the difficulties faced by schools in rural areas of many countries throughout the world, they are to be wholly commended, encouraged and supported in their task.

# 2 Context of the Research /Terms of Reference

## 2.1 Background

The proposal for this research was based on the findings of an initial desk study which set out to examine how agriculture could be used as a means of contextualising the primary school curriculum in rural areas. These findings were published in a Report which was circulated to a range of interested parties.

The desk study highlighted the following key issues:

i) There are serious problems associated with the provision and effectiveness of primary schooling in developing countries. These problems are particularly bad in rural areas;

ii) Relevance of the curriculum to the experience of the pupils is an important factor. In many rural primary schools, the curriculum is set at an inappropriate level, and its origin emanates from a cultural/societal background far removed from that of the rural learners. The situation is worsened in many countries by inadequate resources, poorly trained teachers and the absence of support from policy makers, school administrators and community members. Rigid national curricula and examination systems also contribute to the problems;

iii) By relating the content of the curriculum, and subsequent teaching and learning strategies, to the life experience of the pupils, it may be possible to make schooling more meaningful. In rural areas, agricultural experience can provide an ideal vehicle for contextualising learning in all subjects, including languages, mathematics, science, social studies, health and nutrition, etc. By integrating the agricultural experience of individual pupils into their learning, it may be possible to link the learning environments of school, home and community. Since meaning is the focus here, it is crucial, however, that agricultural examples are not forced into subject areas where they are inappropriate. Identification of appropriate parts of the curriculum for contextualisation through agriculture is critical;

iv) Reports of educational developments at primary level reveal that a number of countries have developed an integrated approach in the primary school curriculum, either nationally, or in a few pilot schools. Agriculture has rarely been noted specifically as a vehicle for contextualising teaching and learning, although it is likely that teachers in some schools do use it in this way. There are examples of textbooks which draw on agricultural examples when illustrating mathematical and scientific procedures and also for language teaching;

v) There seems to be a case for investigating the potential of agricultural knowledge and experience to be used as a means of contextualising teaching and learning, and to examine the implications for curriculum development, resource allocation, teacher training, examinations procedures, and policy formation. In particular, there are implications for a certain decentralisation of decision making. Some degree of responsibility for the way in which teaching and learning takes place would have to move from central planners to teachers, and again from teachers to pupils. This will require commitment, support and vision from policy makers, teachers and managers, pupils and community members alike.

## 2.2 Purpose of the Field Research

The purpose of this second phase of the research was to gather information about schools which have used agricultural experience as a means of contextualising teaching and learning, by looking at the implications for teaching and learning practices, resources, school management and teacher training, and to evaluate the impact of this practice on school attendance, school performance, development of school-community links, and on teacher, pupil and parental attitudes. Case studies were used to examine the capacity of agriculture to act as a familiar vehicle for the development of young rural learners' basic skills of literacy, numeracy, and other life skills which are perceived as necessary for a fruitful and productive life.

At the same time the research aimed to highlight the problems which may arise in attempting to use agriculture in a way which may challenge its traditional role as a vocational subject area. The study aimed to identify examples of good practice, and based on these, highlight issues of importance to educational policy makers, teachers and other interested parties.

## 2.3 Methodology

Details of the methodology are given in Volume II of this report; a summary is presented also in section 7 of this volume.

## 2.4 Outcomes

This research would yield policy suggestions for future interventions, based on the findings of the desk study and the case studies. It would provide guidelines for planners and practitioners relating to the ways and means of integrating agricultural experience and knowledge into primary/basic education programmes, in order to maximise the benefits identified whilst at the same time minimising those constraints which are likely to arise. The outcomes of this research should be of particular value to decision makers at national and international levels when planning the overall structure of their primary education programmes, and to donors as a guide to policy decisions relating to educational funding. It should be of benefit also to both the Education Division and the Natural Resources and Policy Advisory Department of the DfID, providing them with the opportunity to explore and develop collaborative research activities, particularly in subsequent phases of this research process.

# 3 The State of Primary School Education in Developing Countries

## 3.1 The Benefits of Primary Schooling

In 1990, at the World Conference on Education for All, a declaration was adopted to reaffirm the international community's commitment to ensuring the right to education for all people (UNESCO, 1996):

> *"Every person - child, youth and adult - shall be able to benefit from educational opportunities designed to meet their basic learning needs".*

This declaration was made in response to international concern over the deterioration of education systems in previous years. In 1995 an estimated 885 million adults (aged fifteen plus) were illiterate and 110 million children were out of school. Concern has arisen over this deterioration because of the widespread belief that primary education, the main, formal delivery system for the basic education of children outside the family, is a vital component of the development of every nation and its citizens. According to the World Bank (1995):

> *"Education - especially basic (primary and lower-secondary) education - helps reduce poverty by increasing the productivity of the poor, by reducing fertility and improving health, and by equipping people with the skills they need to participate fully in the economy and in society".*

The World Declaration on Education for All, Article 5, declared at the World Conference on Education (1990), states that primary education must be universal, ensure that the basic learning needs of all children are satisfied, and take into account the culture, needs and opportunities of the community. The Article defines basic learning needs as both the essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as knowledge, skills, values, and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decisions, and to continue learning.

Universal primary education is a goal common to most national education policy statements; it is emphasised often that basic education should correspond to the needs, interests and problems faced by the learners, and that the curriculum should be relevant and link scientific concepts, literacy and numeracy skills with the life experiences of the learners. It is believed widely that young people are most responsive to learning during the early years of childhood, and that cognitive and non-cognitive changes occur more rapidly among younger children (8 years old and less). Hence many countries state the intention to provide primary education for the early years of all children and, in some cases, pre-primary education.

Education is identified also by most nations as being critical for economic growth and poverty reduction. Key priorities for education are to meet the growing demands of national economies for adaptable workers who can readily acquire new skills and to support the continued expansion of knowledge. Primary education is now becoming valued more highly because its social returns appear to be higher than those at higher levels of education. Private returns are higher than social returns, since the provision of primary education is funded, generally, by the government. Moreover, the social returns and the productivity of primary education have been more influential outside the formal sector of the economy, which has generated even greater interest. There is growing evidence that primary schooling which results in literacy and numeracy enhances productivity in both rural and urban self-employment. Lockheed et al (1980) showed that 4 years of schooling can increase agricultural output by 8%, a higher impact than the same years of schooling in a "modernising" environment, by leading to :

- increased effectiveness of the individual worker, increasing output with given inputs by using basic skills of numeracy and literacy
- more effective input allocation
- more effective input selection

For many children, primary education will be the only formal education they receive (Elstgeest, 1987). During this period they are presented with the opportunity to become literate and numerate, to develop inquiring minds, and to gain an awareness of the broad social values advocated at a national level. In fact, the official primary education curriculum is remarkably similar world-wide; overall, 35% of available time is spent on literacy and 18% is spent on numeracy.

Although the benefits of primary school education are discussed frequently, Colclough and Lewin (1993) qualify these by pointing out that other factors will affect the development of individual children, regardless of the type of primary education they receive. Results suggest, however, that the lower the per capita income of the country and the weaker the influence of socio-economic background, the greater the effects of school and teacher quality will be on student achievement (Fuller, 1987). Heyneman and Loxley (1983) found that school effects are indeed significant determinants of achievement in a sample of countries which included 16 developing and 13 industrialised ones.

## *3.2 Trends in Primary Education Provision*

### *3.2.1 Enrolment*

According to a recently published UNESCO document on the EFA Mid Decade meeting held in Amman, Jordan (UNESCO, 1996(1)), the single most positive and significant feature of the mid-decade balance sheet for educational provision is that primary education has largely overcome the significant decline and stagnation in enrolments experienced by many developing countries in the 1980s. The target of achieving Universal Primary Education, so that every child between the ages of 6 and 11 will be provided with a public education, still seems a long way off, however (Lockheed and Levin, 1993). 90% of the nearly three million primary schools in the world are in low- and middle-income developing countries; in these schools some 480 million children struggle to learn. Only about one half of all school-age children in developing countries acquire a complete primary education, with nearly half of those who are enrolled dropping out before the end of the primary school cycle in low-income developing countries. According to recent estimates (UNESCO, 1996(1)), some 110 million school-age children were out of school in 1995, a significant decrease from the 129 million in 1990. In sub-Saharan Africa, however, the number of children without access to primary education is still growing. Since 1990 the number of out-of-school children in the 6-11 age group has grown by 2 million to 39.3 million. Considering the increase in enrolment ratios[1] as a measure of achievement of the goal of EFA, according to UNESCO (1996(1)):

> *"net enrolment ratios have risen in all developing regions. This must be seen as a significant indication of genuine progress towards universal primary education".*

In Sub-Saharan Africa, NERs(%) for boys and girls are 65.7 and 56.1 respectively, in South Asia, 75.6 and 55.8 and in East Asia Pacific, 93.0 and 82.0. This means that nearly two out of three school-age children in Africa are enrolled, and it is estimated that NERs in the Latin America/ Caribbean and East Asia/Pacific will surpass the 90% mark before the year 2000. The World Bank (1995), however, believes that unless the pace of enrolment accelerates, the absolute number of children not attending school at all is likely, for the first time since 1960, to increase in the next two decades - reaching 145 million in 2000 and 162 million in 2015. This outcome would be brought about by continued high population growth rates, combined with falling enrolment ratios in some countries.

These statistical figures can only be treated as a guide, however. It would be impossible to obtain accurate figures for NER, for example, as although children may enrol in school, especially when it is a legal obligation, they may never actually attend. It is believed that repetition rates are seriously underestimated in many developing countries, due to the lack of reliable data and the way in which data is interpreted (Amadio, 1995). Average figures for a nation disguise the differences between different parts of the country, or between urban and rural schools, for example.

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[1] Gross enrolment ratios(GER = a total number of pupils divided by the official school-age group); net enrolment ratios (NER= percentage of the official age-group actually enrolled)

### *3.2.2 Repetition and Drop-out*

Estimates of repetition in sub-Saharan Africa over three grades in primary school are around 20%; that is, on average, one in every five pupils is repeating a grade. In Asia/Pacific the rate varies between 7.1 and 10.9 % (UNESCO, 1996(2)).

The phenomenon of pupils failing to complete their primary education programme is frequently referred to as "drop-out". According to LeCompte and Dworkin (1991), a "drop-out" is a pupil of any age who leaves school, for any reason other than death, before graduation or completion of a program of studies and without transferring to another elementary or secondary school. Colclough and Hallack (1975) defined drop-outs as those that leave the school at any time other than the established exit points (at the end of the primary, lower secondary, senior secondary or tertiary cycles). Less than three quarters of a cohort of primary entrants typically survive to grade 5 in 28 of 57 developing countries (Berstecher and Carr-Hill 1990: 110). Drop-out is particularly high in sub-Saharan Africa, with one in five children not reaching grade 4.

There is evidence to suggest that repetition affects early drop-out in school. Amadio (1995) gives a number of examples. A study carried out in twelve municipalities and towns of the province of Hebei (China), found that 68.6% of drop-outs had repeated a grade prior to dropping out. The drop-out rate was only 21.6% among children who had not repeated, 31.6% among those who had repeated once, but as high as 82.8% among those who had repeated more than twice. A survey carried out in the early 1980s in Sri Lanka found that 60% of drop-outs had attended classes on an irregular basis; 21% had repeated grades three times, 31% twice and 64% once. Furthermore, 82% of drop-outs were above-age. LeCompte and Dworkin (1991) highlight a wide range of factors which contribute to "drop-out". They group these into four categories, pupil-related factors, school-related factors, constructed factors and macrosystem factors. There is debate about how important the effect is of each of these factors. Certainly drop-outs are characterised often as being low achievers, poor readers, have discipline problems, are frequent truants, and come from a low income background.

Taking an actual example, a study of rural primary education in Brazil (Harbison and Hanuschek, 1992) revealed a number of interesting aspects related to the drop-out rate. If the father is a farmer, for example, there is a high opportunity cost for children going to school as children are needed for farm labour, hence there is a higher incidence of drop-out in rural areas. Another determinant of drop-out is the age of the child. The older the child, the greater the potential labour contribution, and the more likely it is for the child to drop-out; this means that in each subsequent grade in primary school, the higher the rate of drop-out. Another determinant is the education of the mother, since if a mother is well educated, she would like her children to continue their education. Achievement at school is another determinant; the school performance and the learning achieved, via the curriculum, will determine the promotion probabilities, thus the repetition rate, and as a consequence the drop-out rate. The characteristics of the school is also likely to influence the drop-out rate. If there are not enough school facilities provided, the drop-out rate is likely to increase. Available work opportunities also determine the drop-out rate, as does migration which is in turn influenced by the cost of moving.

In another case, a study of village primary education in Pakistan (Pakistan Ministry of Education, 1977) showed that the reasons for the boys' and girls' drop-out had much in common, with poverty heading the list. In the case of girls, social and religious reasons were also cited. In this case it appeared that drop-outs rated lower in health, intelligence, peer relations, social class/caste, self-concept, and work attitudes. Also seen as influential were parental attitudes towards education, relationship between pupils and family, and familial income and stability. Where these were problematic, pupils rated much lower on school success factors, and on basic skills and knowledge, particularly in literacy and numeracy.

A third example, from the experience of one of the authors of this report, comes from a rural primary school in a state in North East India where the drop-out rate is currently 72%. This school has the following characteristics:

- no financial support from government
- a single room without electric light or water
- 55 children aged 4 to 14
- the youngest children requiring medical treatment, feeding, clothing and washing

- textbooks without illustrations, with close print and set at a level far too advanced for the pupils educational level
- pupils writing with chalk and slate (both in short supply)
- no visual aids
- one untrained teacher who, when asked what her main problems were, said that there were so many it was impossible to begin to explain them.

These examples highlight only the main factors which appear to affect drop-out. Those which have the greatest effect will also vary between regions and between schools. The examples serve to illustrate the complexities behind the statistics, however, and emphasise the fact that there is rarely one particular factor which causes drop-out. Drop-out still arises even when children attend school regularly. Restructuring educational or school policy, or simple "quick-fix" solutions will never be sufficient alone in addressing this enduring problem.

## *3.3 EFA and Gender*

Gender disparities are a major constraint to achieving universal primary education and the wider goals of Education for All. Girls are less likely than boys to be enrolled in school, and two-thirds of the world's illiterate adults are women (565 million). Educating girls and women is increasingly seen as a key to breaking out of the cycle of illiteracy, poverty, marginalisation and rapid population growth. Girls' share in primary enrolments in the developing regions advanced very slightly to reach an average of 45.8 per cent in 1995, against 45.4 per cent five years earlier (UNESCO, 1996(1)).

Many factors which affect female participation in primary education have been identified (Brock and Cammish, 1991):

- Geography - spatial disparity and, in some cases, incompleteness of institutional provision relates directly to difficulties of physical access which adversely affect girls more than boys;
- Socio-cultural factors - there are cultural biases in favour of males; girls may undergo early marriage, early pregnancy and heavy domestic and subsistence duties;
- Health - the effects of poverty and malnutrition on the health of school age children has a greater impact on girls than on boys;
- Economic factors - direct and indirect costs of sending daughters to school are perceived by parents to be prohibitive, as well as the loss of vital help at home and on the land; for more privileged classes, especially in urban areas, investment in the education of females may be an advantage in enabling them to "marry well"; this further increases the urban/rural gap;
- Religion - education of boys tends to be found more acceptable in certain religions;
- Legislation - this is an indirect factor; legislation which aims to support gender equality may exist but in practice, in many rural areas, long standing societal rules constraining females are still operative, as is the case with condoning early marriage;
- Political/Administrative factors - the political will to carry through effective policies is weak in the face of severe economic constraints;
- Education - accessibility, lack of resources and low teacher quality and morale are widespread; there is often a lack of female primary teachers in rural areas, and inadequate guarantees of girls' physical safety; organisation of schooling in terms of the daily and seasonal imperatives of local economies usually renders it dysfunctional, and the curriculum is often unattractive in instrumental terms.

The traditional female role model in patrilocal families is maintained in many societies. Women remain at home, have access to a limited range of paid employment, and generally are discouraged from taking advantage of education to the point where the linguistic development of girls is impeded by their role at home and in the community. This means that access to primary schooling will remain more open to boys unless measures are taken to address this imbalance.

It should be noted that gender is not the only inequality which presents a barrier to education. Other disadvantaged groups, ethnic minorities and the poor suffer also in this regard. As the World Bank (1995) states:

> *"the government's obligation to ensure that qualified potential students are not denied education because they are poor or female, are from disadvantaged ethnic minorities or geographical remote regions, or have special educational needs".*

The issue of disadvantaged groups will be addressed further in Section 3.6.

### 3.4 Spending on Primary Education

In 1993, public expenditure on education as a per cent of GNP in all developing countries was 4.1%. In the forty seven least developed countries, spending on education amounted to only 2.8% of GDP (UNESCO, 1996(2)). Relative to the needs of the primary education system and in comparison with other levels of education, expenditure on primary education per student is trivial in many developing countries and the present levels of spending are inadequate to provide meaningful quality education for all.

It is difficult to prescribe a general guideline to how much should be spent by countries on primary education. Percentages of GNP to be allocated are often misleading because the amount spent in real terms will depend on the size of the economy. Colclough and Lewin (1993) suggest that where investment in UPE is between 3% and 7% of GNP, cost-reduction strategies may be needed in order to reduce the financial burden on government, for example by encouraging community participation and integration. Evidence shows, however, that poor, rural people are not always able to provide a substantial number of resources, nor can they meet the direct or the indirect costs of education. Hence, in countries suffering from severe recession, or in regions where incomes are generally low, many children have been unable to attend school when parents have been expected to pay for primary education.

Although much attention is given by education funders to the economic basis for educational reform, it should be noted that there is always a struggle to estimate the returns for any educational investment. Educational cost-benefit analysis is notoriously difficult to estimate and equally controversial (Hough, 1991).

### 3.5 Recent donor strategies for Primary Education

For many developing countries the goals of providing basic learning skills to all children, youths and adults, will not be met in the near future, but will continue to be a long-term challenge. At Jomtien, guidelines for implementing the World Declaration on EFA were prepared to provide a framework which could be used as a reference guide for governments, international and bilateral aid agencies, NGOs and others concerned with meeting the goals of EFA. The following areas were chosen to be targeted:

- expansion of early childhood care and developmental activities;
- universal access to, and completion of, primary education by the year 2000; improvement in learning achievement;
- reduction of the adult illiteracy rate;
- expansion of provisions of basic education and training in other essential skills required by youth and adults;
- increased acquisition by individuals and families of the knowledge, skills and values required for better living and sound and sustainable development, made available through all education channels including the mass media, other forms of modern and traditional communication, and social action, with effectiveness assessed in terms of behavioural change (Little, 1994).

In response to the declarations made at Jomtien, some bilateral and multilateral donors have increased their support to the education sector. In Germany for example, disbursements to basic education rose sixfold between 1992 and 1994, representing an increase in its proportion of aid to education from 6.5% to 38%. Drawing attention to the high returns on investment in primary and lower secondary education, the World Bank increased its lending for education from US$1.5 billion to US$ 2.1 billion between 1990 and 1994. The share going to this part of the education sector increased from 24% in fiscal year 1990 to 50% in fiscal year 1993. Between 1993 and 1994-1995, UNESCO increased the weight of basic education in its education programme from 26% to 47%. UNICEF's medium-term target is to boost spending on basic education to 25% of its regular resources from the current level of 10% (UNESCO 1996).

The World Bank recently published its priorities and strategies for education (1995), in which it states that the Bank is now the largest single source of external financing for education in developing countries. Primary and secondary education are increasingly important; in the fiscal period 1990-94 these levels represented half of all Bank lending for education. Bank programmes will encourage governments to give a higher priority to education and educational reform, particularly as economic reform takes hold as a permanent process. Basic education will continue to receive the highest priority in the Bank's education lending to countries that have not yet achieved universal literacy and adequate access, equity, and quality at that level. All projects will pay greater attention to equity - especially education for girls, for disadvantaged ethnic minorities and for the poor - and consequently to early childhood education. The World Bank highlights four major challenges which remain, however. These are the need to increase access to education in some countries, to improve equity, to improve quality and, in some cases, to speed up educational reform. In the case of basic education, the Bank stresses that a more efficient, equitable and sustainable allocation of new public investment on education would do much to meet the challenges that education systems face today.

A report by the International Commission on Education for the twenty-first Century (Delors et al, 1996) focuses heavily on what is termed *"The Four Pillars of Education: learning to know; learning to do; learning to live together and learning to be"*. Together these pillars should interact to form the total learning experience, so that education is regarded as a total experience throughout life, dealing with both understanding and application and focusing on both the individual and the individual's place in society. The report emphasises that changes in education should start with changes in the aims of education and the expectations that people have of what education can provide. A broad encompassing view of learning should aim to enable each individual to discover, unearth and enrich his or her creative potential. The desire to develop imagination and creativity should result also in higher regard being paid to oral culture and knowledge derived from the child's or adult's experience.

## *3.6 Constraints on Primary Education Provision*

From the discussion above, it becomes apparent that although primary education offers a huge number of benefits, the capacity of many countries to provide access to all eligible young people is severely limited. During a seminar on innovative measures to overcome socio-economic obstacles to primary school attendance (UNESCO, 1992), participants composed a list of the problems surrounding enrolment, retention/completion and achievement in developing countries in the Asia Pacific Region. Analysis of these problems suggests that they could be attributed to many countries and primary schools, although some problems are likely to be more applicable to rural schools than urban schools and vice versa. The problems may be divided into five main groups:

### *Home factors*

- children have to work to supplement family income;
- children have to help in household work including looking after siblings;
- failure on the part of parents to understand the value of education;
- poor economic condition of the family
- broken families
- illiterate and poorly educated parents
- lack of facilities at home for learning.

### *School Factors*

- inadequate facilities (furniture, textbooks etc.) in the school to educate the children;
- unqualified teachers
- a low level of competencies amongst trained teachers who are unable to interest students in school work;
- unreliable teachers' attendance due to their own earning activities outside the school, and transport problems;
- overcrowded schools;
- lack of special schools and teachers for handicapped children;

- a curriculum that is unrelated to life skills;
- inaccessibility of schools;
- poorly motivated teachers, resulting in low professionalism and misconduct;
- lack of teachers, especially female teachers, which inhibits the school attendance of girls;
- dissatisfaction and low morale amongst teachers who are forced to work in isolated areas against their will;
- non-existence of suitable educational facilities for overaged children and for those who are employed;
- unattractive school facilities and teaching-learning programmes which repel rather than draw children to school;
- lack of teachers' understanding of parental backgrounds;
- little direction or opportunity for professional development amongst teachers;
- irregular monitoring of teachers' work and performance by more experienced teachers or schools inspectors.

*Community Factors*

- migration of families;
- lack of motivation to send children to schools;
- prejudice against females attending school;
- lack of adequate up-to-date population statistics due to the non-registration of births, which means that the schooling needs of the community are unknown;
- rivalry between different tribal groups
- few awareness programmes to inform parents about the potential, value and nature of primary schooling.

*Management factors*

- organisation of the school in a way that divorces it from everyday life;
- authoritarian management styles that frighten and intimidate children;
- inadequate training of school administrators in management skills, and poor leadership on the part of head teachers who are not able to adequately supervise staff;
- no adequate management procedures adopted to ensure that once children are enrolled, they continue to come to school;
- an insufficient number of schools and inadequate infrastructures;
- unrealistic policy making;
- "non-functioning schools", where although schools are established they do not actually operate;
- a lack of collegiality and support amongst school staff;
- inadequate handling of community and parental concerns.

*Child Factors*

- lack of readiness on the part of the child to cope with entry to school;
- children with disabilities who cannot take full advantage of what the school has to offer;
- school phobia due to a fear of teachers and examinations;
- frequent illness resulting in high levels of absenteeism from school;
- malnutrition of children;
- overaged and underaged students;
- language problems;
- different expectations and emphasis on the part of the home and school regarding what is acceptable language; for instance, parents may believe that the local language should be the medium of instruction, while the school may choose to adopt a different language;

- the gender of children;
- poor academic performance;
- early marriage or pregnancy.

The general effectiveness of schools has also been investigated widely. Lockheed and Levin (1993) have identified three groups of factors which appear to contribute to a primary school performing effectively. The absence of some or all of these factors would result in the performance of a school being ineffective, therefore. According to these writers, the curriculum is frequently poor in scope and sequence. Often, the content lacks relation to situations familiar to the students. Instructional materials are in short supply and availability does not guarantee that they will be used, since textbook quality is often poor and/or too difficult for the age-group at which they are aimed. (Recent research of curricular scope and sequence in mathematics and reading textbooks in fifteen developing countries found that the material in both subjects was too difficult at the earlier grades. In the upper grades, the mathematics curriculum was too difficult, but the reading curriculum was too easy and failed to develop problem solving skills appropriately). Time for learning is inadequate, because of very high pupil teacher ratios, extra-curricular demands such as caring for pupils basic needs, and the pull of home commitments. Teaching practices encourage rote learning rather than understanding; teachers are frequently inadequately trained, if at all.

Lockheed and Levin (1993) note also that community-school relationships are often poor and parental involvement and support is limited, non-existent, or at worst, hostile. School-based professionalism is underdeveloped, in terms of principal leadership, teacher collegiality, commitment and accountability. Flexibility in curricula (e.g. encouraging relevance, level and pace to meet local conditions), in organisation and pedagogical approaches is lacking, as is a commitment to create effective schools. This requires vision by leaders at all levels (government, business, parents, community and students), to raise the educational consciousness of the society and hence increase the movement of more resources to the classroom. Decision making is often centralised; however, effective schools appear to require a high degree of school-level responsibility and authority, with accountability to parents and local community.

An important consequence of these deficiencies, apart from poor school attendance, is that many of the pupils for whom primary schooling is terminal appear to have acquired little in the way of knowledge, skills and attitudes which they are able to draw on and apply in their post-school lives, for their own benefit or for the benefits of their communities and nation. Many of them have low levels of literacy and numeracy, even though these are seen as the chief outcomes expected of primary school education. Equally, children who do progress to secondary school often have difficulty coping with the level of studies expected of them there, particularly where the curriculum demands understanding of concepts, rather than rote-memorisation. This "under-education" serves to compound the poor impression of primary schools amongst pupils and parents, and even prospective employers and providers of credit. In turn, this can accentuate the likelihood of drop-out.

Just as the problems which lead to drop-out are many and complex, so will be the root causes of the under-education of any particular pupil. Indeed, many of the factors which contribute to high drop-out rates will also lead to general under-achievement of pupils. In terms of individual pupils, it is of course difficult to know whether any child has reached his or her full intellectual potential at a particular age, regardless of the situation in which they undergo their schooling.

### 3.7 *Educational Innovations*

The problem of low levels of participation and achievement in primary schooling is not new, and attempts were made to address it during the mid-70s, when a new trend had emerged favouring Basic Education as a parallel system to primary schooling (Colclough and Lewin, 1993). The idea was to concentrate on those aspects of primary education which would lead to the formation of economically useful skills such as literacy and numeracy and add others which might support productive self-employment in primarily rural communities. However, since this scheme did not seem to meet the aspirations of the parents, and it seemed to legitimise existing inequalities, the idea largely faded away.

There are, however, many more examples of innovations which have been introduced in an attempt to deal with some of the problems discussed above. Some interesting examples from the Asia region (UNESCO PROAP, 1992), are as follows:

- Attempts to indicate to parents the importance of schooling (Bhutan, China, Indonesia, Lao PDR, Malaysia, Maldives, Nepal, Pakistan, Philippines, Vietnam).
- Holding of parent-teacher meetings to break down the barriers between home and school (Bhutan, China, Indonesia, Maldives, Pakistan, Philippines, Thailand, Vietnam);
- Adoption of a more relevant school curriculum and child-centred approach to teaching (Afghanistan, Bhutan, China, Indonesia, Lao PDR, Malaysia, Nepal, Pakistan, Philippines, Rep of Korea, Thailand);
- Flexibility of the school calendar so that the cultural, work and climatic requirements are met. For instance, vacation periods may occur at crop-planting and harvest time when children are required to work on the farm (China, Lao PDR, Maldives, Nepal, Pakistan, Philippines, Rep. Of Korea, Sri Lanka, Thailand, Vietnam);
- The development of minimum learning levels and the adoption of suitable tools of evaluation to ensure that these are achieved (China, Indonesia, Philippines, Sri Lanka, Thailand, Vietnam);
- Development of special policies to encourage communities to send disadvantaged children (such as girls) to school. (China, Malaysia, Nepal, Philippines, Vietnam);
- Establishment of non-formal education and literacy classes for both children and adults, especially women who have a particularly important impact on children's attitudes (China, Indonesia, Maldives, Nepal, Philippines, Sri Lanka, Thailand, Vietnam);
- Conducting regular in-service seminars, workshops and other programmes on latest innovations to teachers and administrators (Bhutan, China, Indonesia, Malaysia, Nepal, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, Vietnam);
- Establishment of in-service teacher training to encourage teachers to be more child-centred in their teaching methods and curriculum content (Bhutan, China, Indonesia, Lao PDR, Malaysia, Maldives, Nepal, Pakistan, Philippines, Rep. Of Korea, Thailand, Vietnam).

There is also evidence of other programmes that have succeeded in achieving some of the ideals of EFA. These programmes have focused on the objectives of universalising access to education and the quality of education. Little *et al* (1994), detail six important programmes chosen for their initiation, successes and failures, ability to change, implementation and most important, sustainability. These programmes are:

- the Andhra Pradesh Primary Education Project in India (APPEP);
- the Active Learning through Professional Support Project in Indonesia (ALPS);
- the Plantation Sector Education Development Programme in Sri Lanka (PSEDP);
- the Self-Help Action Plan for Education in Zambia (SHAPE);
- the National System of Human Resources Improvement and Curriculum Adaptation in Guatemala;
- the Shilsha Karmi Project, Rajasthan, India (SKP).

Other relevant examples described in the UNESCO EFA Innovations Series include:

- the Village Schools of Save the Children/USA, Mali;
- Chile's 900 Schools programme for the underprivileged;
- the Community Schools Project in Upper Egypt;
- the PROPEL project for non-formal education of rural children in India;
- the Hills Areas Education Project in Thailand.

Some innovations have paid particular attention to the duration and timing of schooling. Lockheed and Vespoor (1990) note that attempts have been made by different countries to alter the length of the academic year; in some it has been substantially shorter (e.g. Ghana, 610 hours) and in others, it has been made longer (e.g. Morocco, 1,070 hours). Actual instructional time is often much less than "official" instructional time in most developing countries, however. Flexible scheduling of school hours has been introduced to reduce student absences by accommodating rural children's work schedules.

Language has also been a focus. Improvements in the English language proficiency of teachers seems to have had an effect on their students' achievement in both language and mathematics where English is the medium of instruction (e.g. in Uganda). Another important feature of innovations in primary schooling in many countries has been curriculum reform. Some 60% of World Bank-financed primary education projects over 1970-83 included a curriculum reform component. In Zimbabwe examinations were localised and the number of subjects and topics in the curriculum were rationalised. Innovative approaches to develop an integrated curriculum design have been introduced in countries as diverse as Sri Lanka, Malaysia, Papua New Guinea and Brazil. In Colombia, "Escuela Nueva" developed an integrated, flexible curriculum for early primary grades, which increased achievement and lowered repetition of rural children significantly. Emphasis was placed on the ability to apply knowledge within the community, on school-community links and the use of local materials for teaching purposes.

Some educationalists believe that a much broader, integrated approach should be adopted; this reflects the view of the "effective schools" movement, where lists of characteristics of effective schools have been used as "blueprints" by which other schools could be developed. In addition, the need for improvement of socio-economic conditions and infrastructures, particularly in rural areas, will be inevitable. It may be seen as necessary to reform the entire primary school sector of a region or country.

Although many reforms, such as those mentioned here, have been attempted over the last forty years, most have been piecemeal in nature. They provide evidence that rhetoric and theory can lead to application and reality, but successes have been variable in degree. Some innovations which lead to improvements in one situation may not have the same impact in another. Those which have succeeded less well can still provide lessons which may help with the development of alternative strategies. Little (1994) stresses that for an educational innovation to be successful, the first step in the process consists in identifying, preferably through an active participatory process involving groups and the community, the traditional learning systems which exist in the society and the actual demand for basic education services, whether expressed in terms of formal schooling or non-formal education programmes. Addressing the basic learning needs of all means early childhood care and development opportunities; relevant, quality primary schooling or equivalent out-of-school education for children; and literacy, basic knowledge and life skills training for youth and adults.

### *3.8 The Focus of this Research*

The discussion above has addressed the issue of primary schooling rather generally in order to highlight current developments and recent innovations. The main focus of this research is, however, rural primary schools. It was noted earlier that many of the problems outlined above pertain to both urban and rural schools, but there are issues which relate specifically to the rural context. The purpose of this research was to explore ways in which teaching and learning processes in a rural environment could be made more effective. Primary schooling in a rural context must first be examined, therefore, in order to explain the value and application of the process of *contextualisation.*

It is important at this point to stress that a strategy such as contextualisation can not overcome all the constraints mentioned above, and it is useful to observe Lewin's (1993) comment that an analysis such as this *"can do no more than point the way towards worthwhile possibilities that need exploration and validation at the intra country level"*. It will, however, suggest a way in which primary schools, teachers and education authorities can address some of the problems listed above, not by trying to change what may be insurmountable obstacles, but rather by building on the opportunities which are presented by rural primary schools and the environment in which they are located.

# 4 Primary Schooling in Rural Areas

## 4.1 The Learning Environment

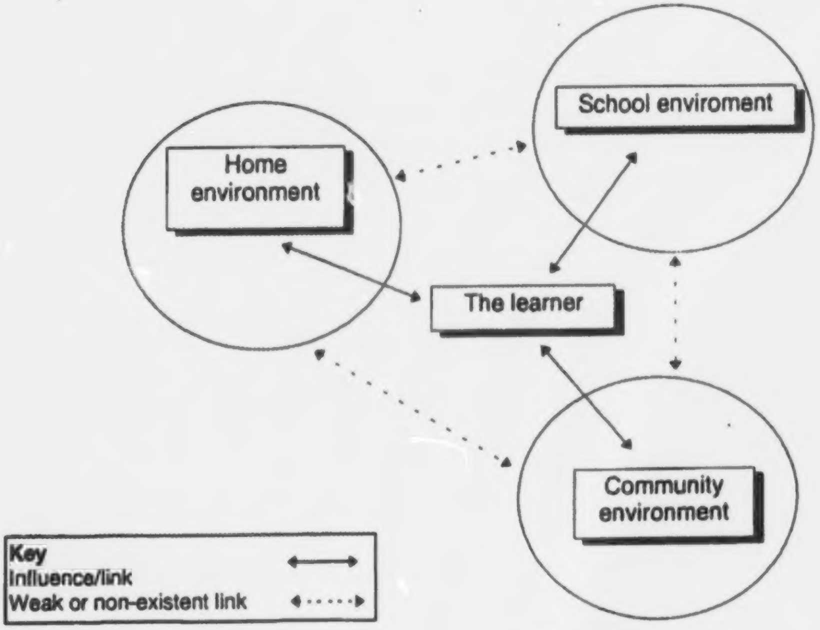
### 4.1.1 The Rural Context

Although all schools may suffer from constraints and problems such as those discussed above, the situation in many primary schools in rural areas is particularly difficult. Rural schools in developing countries suffer even more than their urban counterparts from the major afflictions of low completion rates and under-education of completers. This in turn results, as Lockheed (1993) notes, in an under-educated adult workforce; the rural-urban divide is not merely maintained, but increased.

There are examples of countries (Zimbabwe, Sri Lanka, Ghana, Colombia) where major reforms have been introduced in an attempt to increase provision of primary education in rural areas. These included curriculum reform, decentralisation of examinations, transfer of responsibility for some funding to community members, and changing concept of the teacher's role towards being a facilitator and even an entrepreneur. These changes may have served only to increase the gap between the effectiveness of rural primary schools and those in urban areas, however. Parents in rural areas may be very suspect of their children receiving an education packaged as "rural" which they perceive to be inferior to other aspects of the national education system, especially if it is thought to limit chances for future employment and educational progression. Socio-economic factors are also critical to the success of educational reform; regardless of changes in the curriculum which aim to relate learning more closely to the local environment, economic and social constraints in rural areas deter many of the poorest families from sending their children to school. More far-reaching structural changes in rural education may become necessary, such as adapting the school year of rural schools to fit more closely with the agricultural cycle, so that children who are expected to participate in agricultural activities will be able to do so without missing out on schooling.

The rural context is characterised by complexities and, in order to analyse the situation further, it is useful to look at three distinct environments; the home, the school and the community. This can be illustrated as shown in Figure 1.

**Figure 1** Linking school, home and community environments



It may be noted from this diagram that the linkages between the different environments may vary in strength. The learner is the common factor between all the environments and hence has strong links with each. The linkages between the environments themselves may be comparatively weak, however. The means by which these linkages are strengthened will be discussed later in this paper. First it is important to consider each of the three environments separately.

### *4.1.2 The Home Environment*

In rural areas, parental income levels are often low, and so financial contributions to schooling from non-government sources may be negligible. Children are frequently expected to assist with production-related tasks, and so are not allowed to attend school. Timing of the school day and of terms is often designed to fit more with an urban, industrialised system, expecting children to attend school during busy periods in the agricultural year. Large numbers of children in rural areas do not go beyond the primary cycle for socio-economic and geographical reasons and because of the urban focus of the education system. Thus there is a need for a system of education which would develop the learning potential of rural children and take care of rural needs in relation to resources and future changes (Ader, 1969). Parents in rural areas are likely to have received less formal education than their urban counterparts and may attach a lower value to schooling. Homes, and indeed schools in rural areas, are often ill-equipped to meet the needs of children to study; for example, with an absence of electricity. Children may come to school undernourished and in poor health, placing a greater stress on a single teacher who may have to deal with fifty-plus children ranging in age from four to fourteen years in one room which lacks the most basic facilities and resources (books, visual aids, etc.).

It has been suggested that, because of the gulf between an urbanised curriculum and the realities of rural life, children who live in rural areas of developing countries are "disadvantaged"[2] in comparison with their urban counterparts. This is a contentious issue. According to this argument (Gulliford and Widlake, 1975), adverse environmental circumstances may deny children the security and emotional adjustment essential for consistent application to the tasks of learning in the formal primary school situation:

> *"The environment of disadvantaged children may be rich in certain kinds of experience, but it is a reasonable generalisation that their horizons may be narrow, and they tend to be restricted in many kinds of experience which are often assumed in school work. Curricular activities which make the most of the immediate environment seem particularly valuable to them..."*

Disadvantaged children, in these terms, are characterised by a limited background of language and experiences in their home environments, resulting in difficulty in fully comprehending the language and the concepts used by their teachers, in books and in other materials. This lack of "relevant" experience often results in pupils not being able to think about abstract ideas. Those who were not very successful are likely to be less eager to learn, and hence a vicious circle is formed.

The term "disadvantaged children" may now be seen as somewhat pejorative, since it could be used to make a broader, unjustifiable inference about the *value* of a rural environment and culture from which a child originates. Indeed, many rural development practitioners now emphasise the importance and value of rural peoples' knowledge, and the need for rural education and extension programmes to build on it as a foundation. Seshadri (1993) talks *of "shedding aside the patronising attitude towards the disadvantaged*", and instead "*capitalising on the strengths of these classes*".

The real issue to be addressed, therefore, is not the value of a rural upbringing, but the fact that the aims and processes associated with primary school education seem to be based on an acceptance of a certain range of knowledge, skills and attitudes, the acquisition of which is deemed as valuable and necessary for citizens of a "modern" society. Knowledge imparted within schools is seen by many as "superior" because it is part of a "superior" culture of civilisation (Bacchus, 1982).

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[2] It is important to note that within the broad category of "children from rural areas", there will be children also who might individually be termed "disadvantaged", since their particular circumstances are even less conducive to enable them to perform effectively at school than their peers, either because of their immediate social situation, or because they have special educational needs. In many rural areas where the most basic resources are in short supply or absent altogether, their special needs are even less likely to be met.

### *4.1.3 The School Environment*

**Curriculum**

There has long been an ideological debate over the content and processes of education for rural children. Amongst some educationalists there is a belief in the existence of a body of academic knowledge which, although unrelated directly to the life experience of many people, should be learned by all:

> *"...the educational value placed upon abstractness...is a correct one, even though it also has a fetishistic element. It is also correct for schools to specialise in forms of thought which are not easily mastered through the informal culture. The critical thing is whether they present these forms as alternative or complementary to informal culture".* (Chanan, 1976)

Cox and Jones (1983) suggested that there is a need to deliver the same basic skills to children the world over, since the ability to abstract and master the written word leads to the acquisition of the tools to exercise power, by mastering knowledge that is outside the scope of personal experience. Their view is that this conforms with what parents want for their children, i.e. the means of their children succeeding in finding well-paid employment. Coombes (1985) suggests that the "minimum essential learning needs" for children growing up in rural areas should include: positive attitudes, functional literacy and numeracy, a scientific outlook, and functional knowledge and skills for raising a family and operating a household, for earning a living, and for civic participation. This view would be supported by many. For example:

> *"The basic literacy and numeracy skills are of greater value than specific technical skills when students are unable to find work immediately after they finish training. Technical skills tend to deteriorate with disuse, and employers prefer literate and numerate recruits who can follow instructions and acquire new short-term skills quickly as new job opportunities arise....Primary and secondary school curricula must focus upon the basic skills of numeracy, literacy and scientific understanding".* (Gray et al, 1992).

Often associated with this type of approach to learning is a curriculum which is undifferentiated. In this case there would not be any radical difference in curricula experienced by children grouped according to some perceived disadvantage; any difference should be in the methods of presentation and teaching. The argument for this is that differentiation can result in segregation, and thus some sort of social stigma could be attached to the children, besides prematurely (and probably unjustifiably) closing doors to further educational opportunities. This could also accentuate the urban-rural divide which is observed in many developing countries, thus exacerbating an already difficult situation.

Although this approach to primary school curriculum development and teaching is supported widely, an accusation has been levelled against it on the grounds that, in practice, such a curriculum tends to be geared to those children whose experience conforms more closely with a culture identified as "modern" and "superior". What makes matters worse is that the "superiority gap" is becoming accentuated, since the global influence of western media and marketing organisations increasingly interprets as "modern" a middle-class, urban dream-world, inconsistent with the reality of most rural communities. Curriculum design is often centralised and rigid, revealing an urban bias and middle-class, westernised values (Bennet, 1993), with no opportunity to relate learning to the situation from which rural children come. Children are not stimulated to learn, and rarely engage actively with the learning material. The learning material itself may be based on examples and situations which children in rural areas never come into contact with. Ekanayake (1990) believes that an irrelevant education breeds discontent and frustration and suggests that, in many instances, children who finish primary school seem to be less fit to be creative members of the community than if they had never been to school. He terms them "the schooled illiterates".

**Pedagogy**

Ekanayake (1990) has highlighted a number of deficiencies relating to the school environment in rural areas. He notes that interpretations of children's problems are influenced by socio-economic determinants of achievement and pedagogical traditionalism, whilst the teaching styles prevalent today are the products of these social determinants. Because of this, teachers are unable to comprehend the irrelevance of the content and methods as the main cause of failure, high drop-out rates, non-participation of students, etc. Often, problems with children in the classroom and their intellectual progression are blamed on the home background and hence the parents. The teacher may be at fault, however, through not understanding the cultural background of the child. As Ekanayake states, many teachers, due to their lack of training in rural pedagogy, are unaware of the poor quality and nature of academic support that parents can give at home. Parents often remain outsiders of the school system, students are passive listeners in the classroom and teachers are passive executors of predetermined curricula. The adverse situations resulting from deprivations are further aggravated by the fact that teachers begin teaching not with what the children know or have experienced but with what they do not know and have not experienced. This is because teachers have been presented with traditional philosophies of education which conceptualise parents as an important part of the learning process, so that if one part fails, so does the whole educational process. This reinforces Ekanayake's view that teachers lack skills related to effective use of the rural environment, knowledge of local culture and appropriate attitudes, and the ability to use the children's experiences at home for teaching and learning. The importance of focusing on rurality as a policy becomes paramount, rather than as a matter to which lip-service is paid only.

Teachers in some rural schools are themselves from urban areas and have little or no understanding of the background of their pupils; they may be posted to a rural area against their will, have to travel a long distance to school and, as a result, may have very little commitment to their work. As a result of demotivation, the curriculum implemented may vary markedly from the original, time available for learning is likely to be reduced, and pedagogical practices are likely to be poor. The teaching styles adopted by some urban teachers may be alien to what rural children experience in their day-to-day activities because these elite styles presuppose cognitive frameworks based on middle-class cultures (Singh, 1988).

### *4.1.4 Community environment*

In order to relate schooling to the community environment, some efforts have been made to integrate "community" or "rural peoples'" knowledge into the curriculum. This certainly has been one of the aims of the community school movement, yet it has proved a minefield, since an assumption was made, generally, that school and community knowledge systems are compatible. This led to the development of the argument that, since reality is socially constructed, knowledge which represents an interpretation of that reality or is based on direct experience must be specific to the society in which it develops. Consequently, the basis of school knowledge should be community knowledge.

To achieve this, some countries have developed and implemented a "ruralised", vocationally-oriented, diversified curriculum. Here it is argued that, in addition to literacy, numeracy and scientific understanding, children should acquire skills in technical areas which will relate directly to future work opportunities, particularly in agriculture. This has meant in practice that the content and activities included in the ruralised curriculum are related explicitly to the experiences of children brought up in rural areas. There is here, typically, some kind of focus on local, rural, social and functional issues, including the learning of basic agricultural skills. In this sense, such a curriculum may be relevant in two major ways, firstly in that the curriculum (broadly speaking) is relevant to the life experiences of the learners, and secondly that the learners acquire knowledge, skills and attitudes which will prepare them for life and work in the community from which they come. Primary education of rural children is thus seen as having a vocational orientation. This type of curriculum may be quite rigid, but with a rural bias.

Agriculture has often been an important element of the curriculum in these community-oriented schools. Where agriculture has been included as an intrinsic part of the rural schools curriculum, it has been implemented either as a manual activity, added on to the school curriculum (for example Benin, Burundi, Congo, The Gambia, Seychelles, Uganda, Zambia, Colombia, Sri Lanka, to name but few), or as a distinct subject area in the curriculum (for example Botswana, Cote d'Ivoire, Kenya, Lesotho, Malawi, Rwanda, Swaziland and Tanzania). Primary school agriculture (PSA) frequently forms an important aspect of this type of curriculum, and, indeed, a great deal has been written about it, particularly by Bergman (1983), Bude (1985), Eisemon (1989) and Riedmiller and Mades (1991), amongst others.

A number of factors have contributed to the failure of many of these efforts to provide community-oriented schooling, however. As Bacchus (1982) pointed out, the integration of school and community knowledge is beset by an innate conflict between the two knowledge systems. He noted also that knowledge is not value-free, and is either used as an instrument of social control or domination, or as a tool for conscientizing pupils. This view is supported by Bude (1985):

> *"....the school can either contribute towards deepening or fostering the apprehension of the cultural environment by endorsing its values for the socialisation process and thus by integrating cultural manifestations into the learning contents, or it can ignore or even negate these values and activities and thus accelerate the loss of cultural identity on the part of its pupils".*

Attempts to integrate school and community learning have sometimes led to accusations of creating a strong class bias, providing children with the skills and attitudes needed to fill pre-destined positions in the community and thus fixing their societal roles. Some schools were accused of destroying the best elements of communal life and introducing a new set of values unrelated to the old one. Problems arose also due to a lack of major commitment by policy makers and funders, lack of proper training for teachers, insufficiency of resources and a poor response on the part of the public, who prefer more prestigious academic programmes. Detractors of the ruralised, diversified curriculum (the World Bank in particular) believe that it leads to the creation of a dual system unwanted by parents and pupils, still failing the group of children who are most disadvantaged in society. Also, in most countries, a national curriculum is developed centrally; the inclusion of agriculture, for example, in a national curriculum might be to the disadvantage of urban children since it is likely to be outside *their* life experience.

Another enduring problem is that agriculture and other forms of technical skills training may indeed relate to the life experiences of rural children, but it is well documented that many community members, particularly parents, view primary education as a means of enabling their children to leave agriculture[3] behind and to go to work in urban areas where they may earn money which can be brought home to the family. They do not want their children to be exposed to a "watered-down" version of the national curriculum which may prevent them gaining a fully-recognised qualification, thus impeding their chances in gaining employment or progressing to higher levels of the education system. Such a view could lead to parents withholding their children from primary school; hence there is a need to raise awareness that contextualisation can enhance the possibility for children to pursue and attain a wide range of goals in life.

Finally, there is the debate over whether vocational training in school, for example in agriculture, actually has any impact on levels of production in the community. White (1990) argues that acquisition of literacy and numeracy may be more effective than school agriculture in increasing agricultural production levels, and makes the case that school children should learn "about" agriculture, rather than "for" agriculture; the objective should be to promote "agricultural literacy", rather than to produce trained farmers. Eisemon (1989) notes that learning about modern farming techniques in school does not appear to create better farmers once they return to the community, partly because the adoption of innovative farming practices seems to depend more on the level of cognitive development in an individual, and also because much of the technological content of "modern" agriculture bears no relationship to traditional agricultural practices and knowledge. As Eisemon states:

> *"The content of agricultural instruction and its articulation with instruction in modern science is particularly important. Also important is connecting instruction in modern science and modern agriculture to indigenous knowledge systems, building upon the knowledge and skills students possess from social experience".*

These problems have led many community school movements to revise their strategies. Most now aim to meet community manpower needs and to be involved in activities directly aimed at improving community life, for example by providing services locally.

### *4.1.5 Links between school, home and community*

Improved linkages between the school, parents and community and decentralisation of authority are important measures in moving towards a participatory environment required for improved learning.

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[3] It should be noted here, that it is difficult to separate the concepts of "agriculture" and "rural life". Agriculture is certainly a major feature of the lives of many rural dwellers, but not of all. It is also important to realise that "farming" is not always seen as an occupation, but as "part of life", the purpose of which is to provide food security for the farmer and his or her family.

Some countries have already made this move in their constitutions. In Indonesia, the 1989 Education Law states that education is the responsibility of the state, the community, and the family. In China, the 1985 "Decision on Reform of China's Educational Structure" granted decision making powers for administration of primary education to local authorities. UNESCO, 1994(1).

Involving actively the community and parents in schooling, especially in rural areas where a large proportion of the adults will be illiterate, is an enormous task. It requires an enabling environment in which all members of the society - teachers, administrators, parents, educationalists - will work together in a participatory environment. Parental support is particularly important, as discussed at an EFA Summit of Nine High-Population Countries (UNESCO 1994(1)):

> *"Women are the first and most important promoters of children's education. Their expectations and attitudes towards their children's schooling are an important factor in learning achievement. Research in several countries shows that schools which attain a high level of quality generally also enjoy a strong degree of parental support. Parents must feel that there are clear economic and social benefits in schooling their children, especially their girls".*

Raising motivation and awareness in the community to the benefits of education, especially primary education, is a tremendous task. There is disillusionment with education when at the end of schooling, there is no job and no opportunities for progression to higher levels of the education system. Even within the community in which they live possibilities may be extremely limited, leading to the migration of many young, rural people to urban centres. Ram Niwas Mirdha (UNESCO, 1994(1)) suggests that the purpose of education needs to be better defined:

> *"we should clearly say that it is not for jobs that we are giving education, but for providing you better tools for improving your situation - if you are a carpenter, you will be a better carpenter. If you are an agriculturalist, you will be a better agriculturalist with education".*

Whether such an argument will improve public perception of education is open to question, however.

### *4.1.6 The Role of the Learner*

There is no doubt that linking school, community and home is difficult, but there is one common factor to all three environments which is the most valuable resource of all - the learner. In the various approaches described above, which aim to improve teaching and learning, little emphasis has been laid, explicitly, on the role of the learner in the learning process. Child-centred learning approaches have been advocated strongly for many years; an innovation which has sought to draw on this idea and develop it as practical application is the "child-to-child" approach to learning.

The child-to-child approach to learning is an interesting concept, and one that has been incorporated into many projects world-wide (for numerous examples refer to Hawes, 1988). It is evident that the high aims put on the learning expectations of primary school children are not met, and that the children leave school without the basic learning skills they need for a productive and progressive life. This approach follows the basic principals behind our approach for contextualising learning, based on a subject known to many rural school children. The child-to-child approach rests on three basic assumptions:

- that primary education becomes more effective if it is linked to things that matter both to children and to their families and communities;
- that education in school and education out of school should be linked as closely as possible so that learning becomes a part of life;
- that children have the will, the skill and the motivation to help educate each other and can be trusted to do so.

One particular study (Hawes, 1988), analyses the child-to-child approach in the context of health education but emphasises that *"such approaches to health education may help to "unlock" better approaches to learning on a wider scale"*. In other words the approach could be used to integrate or contextualise the curriculum. Hawes cites an example from a workshop held in Nyeri, Kenya:

> *"child-to-child examined all the applications of mathematics to health and health to mathematics. They were legion. When we understand number, predict, estimate, measure, or solve problems we may do so in relation to imaginary cases (trains starting from different stations; A, B & C digging holes in the ground), or to real, important issues (population growth; budgets to feed a family; measurement of arm circumference). In the second case we do much more than teach*

> *interesting and relevant content at the same time as teaching learning skills. We also develop and reinforce the concepts and skills far more effectively because they are related to something both children and their teachers understand and value".*

Child to child and child-centred learning approaches place the learner in a central role in the learning process. The learner becomes the core and focus of the entire learning process. The experience of the learner is drawn upon and used as a basis for the development of new learning. For young children, the home environment clearly is a crucial factor in their experience of life (whatever or wherever this "home environment" may be).

From this discussion, an important conclusion may be drawn. Although links between the school, home and community environments may be tenuous or absent altogether, the learner acts as a focal point for this tri-partite structure; it is the learner which can bring the three environments together.

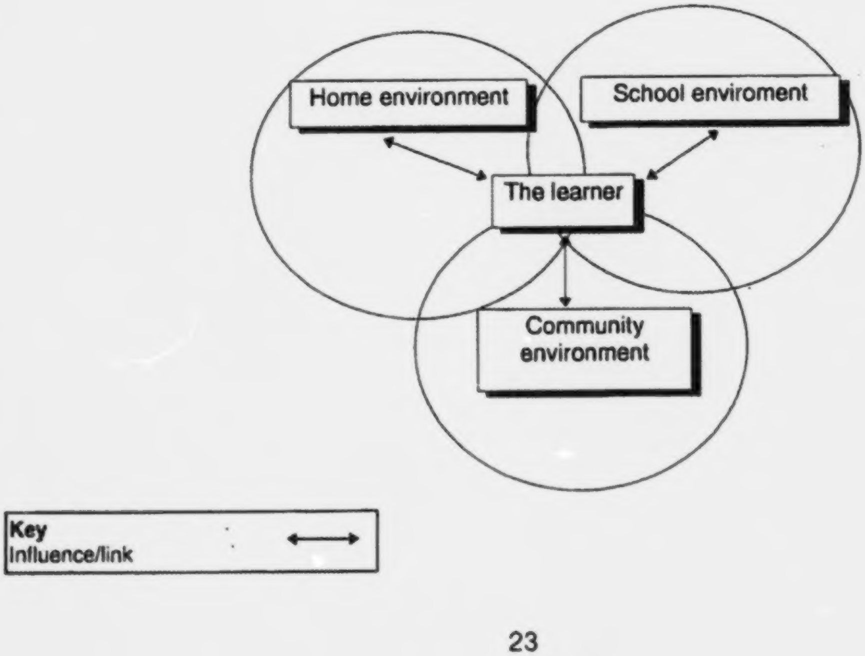
### *4.2 Innovations at School Level*

Many of the problems discussed above, such as those associated with socio-economic factors, are difficult to resolve since they cannot be addressed easily through educational reform, but require action by a wide range of stakeholders, including the government, local communities, and perhaps, under certain conditions, schools. Schools, presumably, can do something about educational problems. They do not hold the key to all educational solutions of course, since government will need to provide complementary support by creating enabling policy and by supplying resources, not only material, but also through the reform of teacher training, learning materials production and curriculum development. Since a lot of what goes on in rural schools appears to differ quite markedly from what is propounded by policy makers and centralised curriculum developers, however, so schools may well be able to play an increasingly important role in meeting the needs of the children who attend them. As stated by UNESCO (1994):

> *"The school of today must overcome these developmental problems both in terms of relevance to the community and in terms of establishing a curriculum which is both universal and yet specifically tailor-made for a particular situation".*

In order to achieve this goal, the real challenge for a school is to strengthen and develop the links between the school, home and community. As discussed above, the learner can play a central role in this process, to the benefit of all. The "ideal situation" where learning environments are linked strongly, is illustrated in Figure 2.

**Figure 2** Linking the learning environments



What can schools do in order to bring the learner into the heart of the learning process? In order to make learning more meaningful for rural children, it becomes necessary to create conditions where the curriculum and teaching and learning practices are influenced by the experience and environment of the pupils, enabling children to integrate their learning experiences inside and outside school. As Victor Ordoñez, Director of Basic Education Division in UNESCO (UNESCO, 1994) states,

> *"teachers must also learn to see the children as building blocks - To build on what he or she has learnt before coming to school. They will know how to milk a cow, count the chickens and pigs. Build on that. My message is quite simple: let us not think of the vehicle, or the progress of the vehicle, but its contents, what is taught and how".*

One innovation which may bring the different aspects of the learning environment together is the *contextualisation of learning.* This is the concept at the heart of this research and must be defined more clearly.

## 4.3 Contextualising Teaching and Learning

### 4.3.1 Reaching a definition of contextualisation

Educationalists have for many years been thinking about how the way children learn in school can be related to their environment. Gulliford and Widlake (1975) quoted John Dewey saying that,

> *"Children are people. They grow into tomorrow only as they live today"*, and also *"... when we say a child cannot understand, we frequently mean that he has not had sufficient experience of the right kind to be able to understand".*

More recently, Bloom (1992) notes that children's:

> *"personal experiences, emotions, metaphors, interpretative frameworks, and so forth serve to create a complex system of processes that affect the nature of their personal knowledge and how it is constructed".*

From this perspective, the educational development of a child is inseparable from the "being" which the child has become, brought about through a complex history of social interactions and related to the context in which the child has been raised. As children develop, they continue to construct their own being, and education as an experience can affect and contribute to this process. This "constructivist[4]" approach to the way in which children learn has challenged the Piagetian emphasis on individual cognitive development and is the subject of much recent research and writing (Wheatley, 1991, Ritchie and Russell, 1991, Ritchie, 1994).

The argument as described by Bloom (1992) is that learning involves constructing meanings based on previous knowledge and experience, which can be semantic (formally acquired knowledge), but also episodic knowledge (personal experiences), interpretative frameworks, metaphors, emotions-values-aesthetics (EVAs) and the products of various mental processes (aspects of contexts of meaning). Contexts of meaning can involve traditional cognitive processes, such as categorising, associating and inferring, and elaborating and story telling; these are influenced by other aspects of contexts of meaning, such as the above. Bloom suggests that the components of contexts of meaning, particularly metaphors, interpretative frameworks, and EVAs, substantially influence knowledge development processes.

Metaphors and analogies are two means by which learning in school can be related to a child's own experience of life since they express abstract ideas by grounding them in concrete experiences (Black, 1977; Lakoff and Johnson, 1980). Metaphors act as comparative mechanisms that link different types of information. White (1988) lists nine basic types of metaphors, the two most common types being those that link actions and those that compare attributes. Metaphors link observed phenomena with familiar phenomena, and the associative-inferential process is therefore facilitated by the metaphor. In young children, metaphors are usually rooted in an anthropocentric and anthropomorphic framework, but they assist in the learning process. Metaphors which are constructed by the children themselves and are meaningful to them enrich conceptual understanding. These are powerful tools for facilitating, establishing, and extending those understandings. Solomon (1986) concludes that the allusions to past experiences provide "*metaphorical illumination*" found in everyday discourse, and this becomes a means of reasoning about the unfamiliar and about problematic phenomena.

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[4] Constructivism is an epistemology which focuses on the role of the learner in the personal construction of knowledge (von Glasersfeld 1987). Learning is viewed as an adaptive process where the learner's existing knowledge is modified in response to perturbations which arise from both personal and social interactions (Wheatley, 1991)

The use of analogies, on the other hand, have been described by Flick (1991) as,

> *"a cognitive process, that is evidenced by linguistic structures..., that establishes an association with previous experience in some way that may be explicit or implicit"*, and that *"Understanding is conferred on experience through a knowledge framework which functions as a cognitive mechanism for relating elements of the experience together"*.

White (1988) describes this knowledge framework as an interrelated complex of images and other sensory impressions, linguistic forms, kinaesthetic memories, as well as affective features of experiences. Gentner (1986) proposes that, through intuition, children couple the multifaceted knowledge frameworks of past experience with novel situations. One tool which can enhance this coupling is the creation of analogies, which have a explanatory-predictive purpose (while metaphors have a more expressive-aesthetic purpose). Duit (1991) states that, since learning is an active construction process and can only take place on the basis of previously acquired knowledge:

> *"Learning, therefore, fundamentally has to do with constructing similarities between the new and the already known. It is precisely this aspect that emphasises the significance of analogies in a constructivist learning approach".*

Flick (1991) warns that any new instruction in school must constantly ask the pupils to re-examine past experiences. The analogies that they intuitively make must be explicit to them so that they can construct on their acquired knowledge. Linking past experience with concept formation through instruction is not a matter of finding the right analogy upon which to base instructional design, but rather the provision of a stimulus to trigger off other relevant experiences. Specific analogies can be used as a useful instructional tool, but teachers should be sensitive also to the spontaneous or intuitive analogies created by students.

In summary, although everyday out-of-school experience contributes to the knowledge constructed by a child, additional experience must be provided within the school environment which will enable a child to understand complex, conceptual learning of skills in science, mathematics, languages, etc. In order to enhance a child's capacity to develop skills in these areas, however, it is essential to relate these subjects in some way to the child's own personal experience of life, and thus to integrate the entire learning experience. In order to meet the "essential learning needs" listed by Coombes, therefore, it becomes clear that the content of education programmes, the methods by which learning is facilitated, and the materials used to this end must all be pertinent to the experience and culture of the learners (Graham-Brown, 1991). In other words, learning should be *contextualised*.

A definition of contextualisation is reached, therefore for the purpose of this research.

*Contextualisation of learning occurs when the content of the curriculum, and the methods and materials associated with it, are related directly to the experience and environment of the learner.*

### *4.3.2 Implications of Contextualisation for Teaching and Learning*

***Implications for the Curriculum***

As described earlier, the curriculum for rural primary schools in most developing countries is centralised and inflexible with an urban, western, middle-class bias. In these situations, decentralisation of the curriculum development process seems unlikely to happen in the near future.

There are different approaches to curriculum development, however. Some educationalists advocate the creation of *integrated curricula*. Such an approach to curriculum development is certainly conducive to the use of contextualisation in schools, since there is much greater potential for teachers to develop the content themselves within certain topic areas. This means that they can relate learning much more closely to the local environment.

Bacchus (1982) defines integration as "the combination of the several components of an object, organisation or a system into a whole in order to render it entire or complete" (p.1). A curriculum developed on this basis may have a core, which is identified as essential learning for all primary pupils throughout a country, but the way in which this core is handled is not prescribed by central policy makers. In order to render the curriculum complete, additional, optional areas will be included, depending on the locality of the school and the background of the pupils and teachers.

There are strong arguments in favour of this approach. As Krogh (1990) states: "*Most of the learning in our lives is along the lines of an integrated curriculum*". Following this idea, Krogh suggests ways that integrated learning, which prevails in everyday life, could be incorporated in the school programme. The teacher can choose a theme, create a topic web which relates and links a range of sub-themes or topics, and then add or subtract activities as it becomes apparent that there is too much or too little emphasis in some areas. This flexible method of teaching is an extension to natural teaching which takes place outside the school. It can build on a child's experiences, covering the whole curriculum whilst developing skills in a meaningful context, as opposed to breaking learning down into categories by subject area, which is less natural, more forced, and less interesting or exciting. Through a learning web, academic, social and emotional needs can be met. This approach was supported strongly at a recent conference held in Ethiopia (PEAP, 1996):

> *"Children see the world holistically, that is they make meaning of their surroundings by making connections. Learning takes place through the introduction of new information which meets prior knowledge and experiences of the learners. Learners come to school with knowledge from their home, friends, environments, radio, etc. This knowledge is not necessarily broken up into maths, mother tongue, natural science, social studies, etc. They come with knowledge and experiences that have meaning to them. In helping children to learn new concepts and processes it is important to make connections to the knowledge and experience that they already have. These connections between new knowledge and their existing knowledge are best make in a holistic manner which is facilitated by the integration of fragmented subjects into one or two areas (such as is being done with natural science, social studies, agriculture, home economics and handicraft)".*

Most primary school curricula in use at present are not topic-based, but are organised according to the study of separate, specific subject areas or disciplines, such as language, mathematics, science, history, etc. Contextualisation still allows teachers to relate the content, however rigid, to the local environment. There are elements of all subject areas which can be contextualised. In this way, a centrally produced curriculum can be "localised" because teachers adapt the way in which they deal with the prescribed content by using the experience of the learners as a basis for teaching and learning. This is one way of addressing the problem of rigid "relevant" basic education programmes produced on a national scale, as curriculum flexibility is encouraged at a local level. The process of contextualisation will, necessarily, involve a range of stakeholders, not only school, government and community representatives, but also the learners themselves as they contribute actively to the learning process. An important impact of contextualisation, therefore, is, in the words of Lubben et al (1995), "*curriculum empowerment*".

Contextualisation can achieve the difficult task of linking "school knowledge" and "home knowledge". The Report of the National Advisory Committee of India (1993), gives an example:

> *"one teacher who tried to make such a bridge in a lesson about letter-writing was asked by a class VI child: "madam, shall we write it the way we write at home or in the school way?"*

The report continues to state:

> *"this kind of perception results in the confinement of classroom life to a narrow orbit. Classroom knowledge assumes total independence from the child's own experience and knowledge of the world. As a consequence of this de-coupling, children begin to compartmentalise knowledge into two categories: that which has currency in the school and classroom, and the other which has uses and relevance outside the school."*

An aim of contextualisation is to put an end to this de-coupling by decompartmentalising knowledge, and allowing all those involved in the learning process to recognise that learning is in fact a common currency to all learning environments.

### *Implications for Pedagogy*

Contextualisation can be applied in many different areas of the curriculum, but there are a number of implications for pedagogical practice. The size of the teacher's exclusive territory will decrease, inevitably, with a subsequent increase in the amount of input children have into designing their environment. This may pose a threat to teachers who are familiar with a strongly hierarchical school environment, and prove equally uncomfortable for pupils, parents and policy makers. Teachers will also have to develop skills in understanding the environment from which the learners come from, as their pedagogical approaches should attempt, as Aghihotri et al (1994) suggest, to "*work in harmony with the world of the child and the community by, for example, including drawing, pictures, songs, stories and riddles of and by the local people and by encouraging the child to relate the content of the text to the environment often involving activities that would necessitate observation and analysis of the environment*".

Many other types of inputs will be also of great importance, for example, the preparation of special materials, such as workcards, worksheets, additional pictorial or taped material, guides on the use of audio-visual materials, materials information and reference books which are easy to read in a language of instruction familiar to the children, whilst introducing novel terms in a suitably paced way. Lubben et al (1995) note that *"contextualised materials stimulate student participation and provide the opportunity of identifying student misconceptions"*. They point out also that girls, who may feel alienated from schooling, can relate more easily to contextualised materials, and hence become more motivated to study and produce a better academic performance as a result.

Bearing in mind the severe constraints facing rural primary schools and teachers, a major difficulty associated with contextualisation is that its success will depend largely on the skill, motivation and professionalism of teachers, as well as the availability of suitable resources. Many materials and texts available currently are, as stated by Aghihotri et al (1994) "*very distant from the environment of the child, both in terms of content and language*". This leads to indifference, alienation and non-participation of the learner in the learning process. Another problem is that the experience, culture and "knowledge" of people who live in rural areas varies from one locality to the next; even within a specific area the knowledge and experience of individuals differs markedly. There is no single knowledge or experience which can be used as the basis for the curriculum, therefore. Metaphors and analogies should, if they are to be effective, be derived actively by the child, based on his or her individual experience and, as Lubben et al (1995) note, on experiences they may have in the future or which they find contentious or relevant for other reasons (perhaps because it relates to experience of their peers or role models). The Department of Primary Education, Sri Lanka (NIE, 1994) supports the need for teachers to link their teaching to the external environment:

> *"Education is a continuous process and hence it has been emphasised that education should not be confined to any particular period of time and any particular place. Possibilities for supplementing the formal education process with non-formal education modalities to make education better related to day to day living and hence more meaningful to the learner must be explored"*.

There are implications, therefore, for teacher training, both in-service and pre-service, for more imaginative means of creating and distributing resources for teaching and learning, and also for time management, since the development of contextualised materials for teaching and learning will inevitably be a time-consuming activity. In this respect, it is important to be aware that many teachers carry a very heavy burden already; not only do they work under difficult conditions, often with large numbers of pupils, but they have to perform many activities relating to the social welfare of children in the school which go far beyond what is often thought to be the normal duties of a teacher. Ways of supporting teachers, both materially and psychologically, will have to be found which enable and encourage them to develop new strategies and approaches without becoming completely demoralised and exhausted in the process.

## 4.4 Using Agricultural Experience as a Medium for Contextualisation

In order to contextualise teaching and learning, a teacher must identify aspects of the learners' experience which will provide a valuable resource of basic concepts, metaphors and analogies to which the content of the curriculum can be related.

In rural primary schools, most learners have direct, first-hand experience of agriculture, either as a result of their own activities, contributing to the family livelihood, or from observation of their immediate surroundings. An agricultural topic used as a medium for contextualising part of the curriculum could, therefore, provide an avenue through which children can have repeated experiences which help them to master cognitive, physical and social skills. Agriculture could be the basis of integrated projects incorporated in the school curriculum, with academic activities chosen for their locally relevant, experimental attributes. Even though the agricultural experience of individuals will differ, agriculture can still be used as a vehicle to make school learning more meaningful. Metaphors and analogies can be based on agricultural activities and experiences, and thus enhance the acquisition of literacy, numeracy and the skills of basic scientific reasoning within the confines of a subject-based curriculum.

Where the curriculum allows it, local agricultural practices can be used as a basis for *"the development of an integrated life-centred curriculum with teaching devised according to "centres of interest" or "projects" where traditional subject boundaries are given up as artificial. During a period of several weeks, for example, all teaching would be centred around a given topic, with language, arithmetic and science skills being imparted in the process"* (Riedmiller and Mades, 1991). Children can be encouraged to relate the learning process in school with the natural learning process which exists outside the classroom, and begin to provide the means by which the process of learning becomes continuous, in school and beyond. It could enable children to develop not only basic knowledge and skills, but also higher-order competencies, such as problem-solving and thinking skills, and broader competencies such as leadership skills, group skills and personal initiative (Black *et al*, 1993). This would be expected to enhance interest and thus motivation.

Coverdale (1972) suggested how a simple study of maize could be used as a theme for learning, whatever the structure of the curriculum. Measuring plots could involve mathematics, development of powers of observation and communication and the use of language. The history of the maize plant could be considered, as could geography in terms of where maize grows in other countries. This approach to learning aims to provide general education in an agricultural setting, since in rural schools, *"there is a very strong case for a rural bias to be applied to the whole basic syllabus in order to give it a coherent pattern of meaning and relevance"* (Coverdale, 1972). Agriculture provides an ideal basis for this "rural bias", because of its familiarity to the majority of rural school children. At home, many pupils will be involved in daily agricultural practices such as feeding and herding livestock, watering, digging and weeding. Agricultural seasons may also affect the pupils' school attendance record. This familiarity with agriculture may provide a basis for contextualising learning over a range of subjects, including reading and writing, mathematics, science, geography, social studies and home economics, as illustrated in Figure 3.

In order to adopt this approach, teachers would need to have an understanding of local agricultural conditions and also to have the capacity to learn from the local environment and from their pupils. As mentioned earlier, this has implications for teacher training and support. It would be necessary, also, for teachers to be able to produce learning materials which draw on agriculture as the context for the learning. Some school text books have been produced recently which encourage teachers to use agricultural illustrations for mathematics, science and languages; some examples are given in

The Department of Primary Education, Sri Lanka (NIE, 1994) advocate strongly the use of agricultural experience as a medium for contextualisation:

> *"The success of the teaching -learning process depends heavily on the motivation of both the learner and the teacher. It has been identified that information regarding food habits and types of food of the community can be used in introducing innovative strategies in education. Outdoor activities using agricultural plots in the school and the home can also make learning more meaningful and hence attractive. These plots could be used for introducing concepts in mathematics, language and social studies, etc....Since agriculture is the main occupation of the parents in the Sinhala Medium areas, every attempt must be made to help them to learn better*

*practices. Well maintained agricultural plots in the school could be used in teaching not only agriculture but also concepts in science, mathematics, nutrition, social studies, etc. These plots could also serve as demonstration plots for the community. In addition these could be used as nurseries to provide seeds and plants of improved varieties to farmers."*

The use of agriculture in this way could have considerable advantages. It will appeal to parents and employers if it is proven that such an approach enables young people to cope more effectively with the subject matter in school. At present, passive, written examinations are the arbiters of success in most national education systems and this situation is unlikely to change in the near future. Although decentralisation of examination procedures is often discussed, many national policy makers still feel unwilling to introduce continuous assessment procedures which place new demands and responsibilities on teachers. It will be crucial, therefore, that parents and pupils feel that a new, innovative strategy introduced in schools will not reduce the chances of success in examinations; the aim of a strategy such as contextualisation is in fact to increase this chance of success, since by understanding abstract concepts better, pupils should perform better in examinations. Also, pupils who have left school should find that they are able to apply what they have learned in their local communities, and school pupils themselves will gain satisfaction from their own personal development. These skills will be useful, too, to those children who do succeed in progressing to higher levels of education. As Ravi & Rao (1994) state:

> *"The local environment with which the children are familiar, and upon which the teacher and the children can draw for information and materials has to be seen as an area for study which is worthwhile".*

**Figure 3** Agriculture as a basis for contextualised teaching and learning

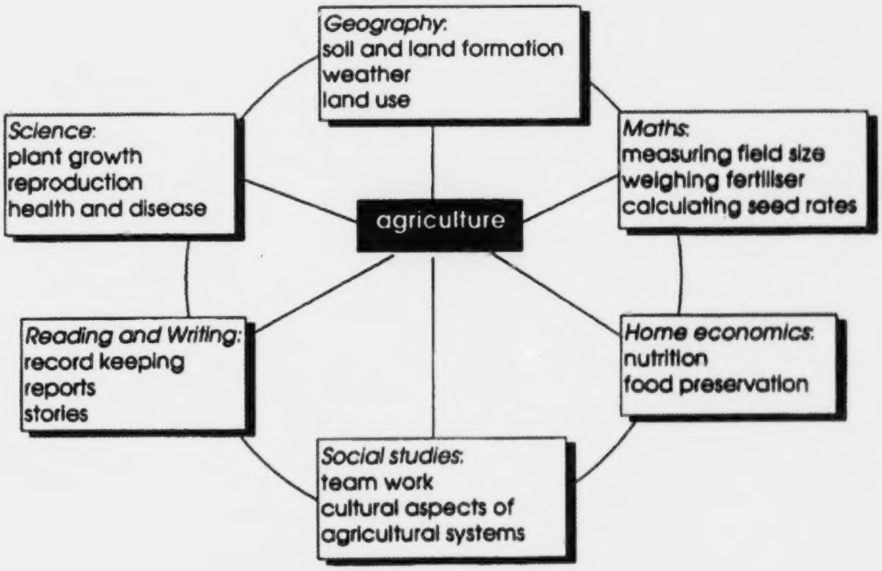
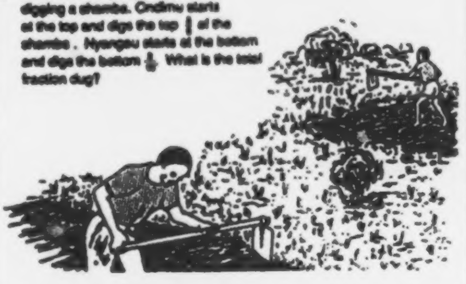

*Geography:*
soil and land formation
weather
land use
*Science:*
plant growth
reproduction
health and disease
agriculture
*Maths:*
measuring field size
weighing fertiliser
calculating seed rates
*Reading and Writing:*
record keeping
reports
stories
*Home economics:*
nutrition
food preservation
*Social studies:*
team work
cultural aspects of
agricultural systems

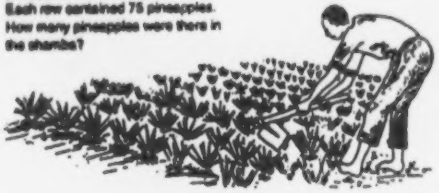
Figure 4 Examples of text-book material which draw on agricultural practice and experience

4. Ondimu and Nyangau are digging a shamba. Ondimu starts at the top and digs the top [illegible] of the shamba. Nyangau starts at the bottom and digs the bottom [illegible]. What is the total fraction dug?



6. Omolo dug $\frac{1}{4}$ of his shamba on Monday and [illegible] on Tuesday. What total fraction of the shamba did he dig in the two days?

5. Olugah planted 139 rows of pineapples in his shamba. Each row contained 75 pineapples. How many pineapples were there in the shamba?



## E Talk maths: A dialogue

A: Look at Mr. Kombo's cows.
B: In 1988 he had five cows. Today he has eight cows.
A: By how many have his cows increased?
B: They have increased by three cows.

| | 1988 | Today |
|---|---|---|
| Cows | (5) | (8) |
| Hens | 12 | 20 |
| Sheep | 25 | 36 |
| Goats | 10 | 16 |
| Pigs | 8 | 12 |

## F Write a letter like this to a friend.

PO Box 347,
Isiolo,
12/2/88

Dear Maja,
I have done two important jobs today.
I have milked the cows and I have planted the onions. Please write me a letter about your day.

With best wishes,

Tom

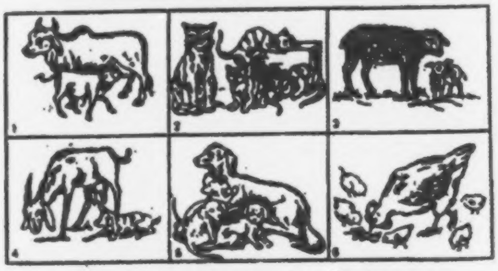
These words will help you.
clean, water, hoe, mend, iron, cook, wash, dust, herd, weed, pick, brush

page eight (8) date............

CLASS WORK 8

A VISIT TO A FARM

Yesterday Ashok and Anita went to their uncle's farm. There they saw a cow, a cat, a sheep, a goat, a dog and a hen. They also saw a lamb, a kid, a calf, some chicks, some kittens and some puppies.



Now complete each sentence by writing the correct name in each blank space. You can choose your words from the box.

1. Young cows are called calves.
2. Young dogs are called ..............................
3. Young cats are called ..............................
4. ..................................... are young goats.
5. ..................................... are young sheep.
6. ..................................... are young hens.
7. The babies of cats are called ..............................
8. The babies of cows are called ..............................

| | | |
|---|---|---|
| puppies | calves | kittens |
| kids | lambs | chicks |

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# 5 Contextualisation - Implications for Practice

## 5.1 *Contextualising teaching of a subject-based curriculum*

As mentioned in the previous section, the majority of curricula being used in primary schools are subject-based. A teacher will need to recognise, therefore, which aspects of the specific subject matter are amenable to contextualisation, by identifying elements which provide a direct link to the experience of most or all of the learners. This section highlights different curriculum areas which could be treated in this way, and pays attention, particularly, to the use of agriculture as a contextualising medium. As Riedmiller and Mades (1991) state:

> *"The handling of regular school subjects is localised, by relating the topics of the separate subject syllabi to the local environment; in this way, the subject is the point of origin; the environment then functions as a teaching aid to illustrate academic themes and to serve as a practical ground for applying the acquired knowledge and skills"* .

## 5.2 *Contextualising Language*

One of the reasons that primary school children in developing countries appear to face difficulties with the study of science and mathematics is that the language of instruction is unfamiliar to them (Eisemon, 1989). Cleghorn *et al* (1989) describe, for example, the situation in Kenya where restrictions on the use of languages other than English during instruction may ultimately hamper student understanding of important concepts. When instruction is in a second language and when the concepts being taught lack equivalence in the students' language and culture, teaching involves a process of "dual translation".

Solomon (1987) notes that most cross-cultural studies in science education lean heavily upon the use of language to explore different meanings. This implies that cultural variation implies different ways of perceiving nature, and also, perhaps, that different languages directly affect how nature is understood. It seems to be the mother tongue, rather than the language of the school, which most affects the conceptual profile of children.

Vygotsky (1978) held that children's language "turns inward" to become the basis of inner speech and so of thought itself. This is not a problem where the curriculum is taught in the local language, but there are cases where subjects such as science and mathematics are taught in English, French or Portuguese, and these are not the first language of the child. Strevens (1976) made the point that most studies in the philosophy and the practice of science education embody two unstated assumptions: first that all the learners are members of the same culture, and also that they have the same common mother tongue. These assumptions are false in the case of developing countries. For example, in many rural schools, there might be different dialects spoken by teachers and pupils; there are cases when teachers have been posted to schools where a completely different language is spoken to their own. Another problem occurs when text books and learning materials are written in a different dialect or language than the "first" language of the children. Consequently, these pupils are disadvantaged in terms of language, not because their own is inferior or inadequate, but because they are required to conceptualise using words unfamiliar to them.

Strevens (1976) observed that the following problems were particularly common:

- unanalysed difficulties of mutual comprehension between teacher and pupil, especially in spoken English;
- the absence in the learner's own language of a word of expression equivalent to one in English;
- the absence in the learner's own language or culture, of a necessary concept;
- word-order difficulties (e.g. syntax, lack of familiarity with common everyday roots from Greek and Latin that enter the scientific vocabulary, lack of precision in the use of language, interference from non-decimal counting systems).

Agriculture could provide a means of solving some of these problems, as the use of metaphors unfamiliar to the children constitutes an impediment to the learner's understanding. If the teacher allowed children to construct metaphors and analogies using their own language and based on their own agricultural experience, this could be an aid to deeper understanding of complex topics. Bude (1993) describes how children in schools in Cameroon use the medium of folk tales and fairy stories as metaphors and analogies, many of which are grounded in an agricultural context. Cleghorn *et al* (1989) point out that when language restriction does not operate strongly in practice, as in the case of Kenya's rural schools, locally relevant examples are more easily brought into the lesson along with the occasional local term, hence meaning is better communicated.

Children could also relate abstract concepts which are alien to their own culture through the medium of their experience of agriculture and local practice. Connections can be made between the concrete cultural world outside the school and the semantic organisation of the abstract world being constructed through science lessons. Strevens (1976) points out that in many cultures measures are seldom exact, since approximation is more practical. In other cultures, weight and measures of weight are new ideas. The essential point, however, is that although a society and language may not employ concepts and terms that are identical with those of Western science, they will certainly have some concepts and terms which refer to number, measurement, agriculture, architecture, engineering, medicine, botany, and other fields of scientific activity. The cognitive task for the learner of science through English for example, is the acquisition of fresh attitudes towards observation and of terms for ideas which are partly new to him or her and partly just different from those already familiar. Agriculture can help to achieve a smooth transmission from one stage to another since new concepts will be incorporated in a familiar topic.

Agricultural practice in many countries is also closely related to beliefs which do not fit into a Western "logical framework", such as magic, superstition and ritual. There is now a recognition that much superstition is actually based on sound scientific principles, although not articulated in this way; a medium such as agriculture could help to identify the links between "modern" and "traditional" thought, demonstrate that these are not always mutually exclusive, and at the same time enable learners to understand scientific concepts and processes which are beyond their experience.

Cleghorn *et al* (1989) highlight one major problem associated with the use of local languages at primary school level. As a result of using local languages, it is thought that children may fail to advance quickly enough in the official medium of instruction. When this is an examinable subject, and even a prerequisite for promotion to secondary school, failure to read and write to an accepted standard could lead to drop-out, repetition and general demotivation. They note, however, that in rural Kenyan schools, using vernacular languages and terms to explain abstract concepts appeared to contribute towards literacy in the sense that children paid more attention to the topic, understood better what they read, and were therefore able to relate to it and better transform it to knowledge. Combining the use of the vernacular language as a means to induce understanding, with English, may have expanded the children's awareness of word meaning and language differences, helping to develop their English competency while also fostering understanding of the concepts being taught. Their research seemed to prove that the use of the occasional local term assisted the process of moving back and forth between locally relevant concrete examples and the abstract. Since most agricultural practices, processes and concepts do exist in vernacular languages, this means that they can be used effectively to explain natural phenomena, and thus enhance understanding. Also, where agriculture is used as a basic theme in an integrated curriculum, learning will not be confined only to everyday situations, but will facilitate the acquisition of a wide range of skills, eventually helping school leavers to achieve social mobility, should they desire it.

### *5.3 Contextualising Science*

Husen and Keeves (1990) describe a programme initiated by OECD with participation from UNESCO for the redefinition of curricula in the areas of science, technology and mathematics education from kindergarten through to secondary school in its member states. A characteristic of this changing educational scene is the greater emphasis placed on science education at the primary school level. In some countries this is a new development, so there is scope for seeking innovative ways of devising suitable curricula. The Nuffield science projects in the United Kingdom have aimed to promote thinking by children through the integration of science topics. These developments were furthered as a result of the 1985 Bangalore Conference on "Science and Technology Education and Future Human Needs". The starting point for this conference was to identify issues that are essential for development, including food and agriculture, and to examine how science teaching could be developed without maintaining the division between the "pure" sciences, physics, chemistry and biology. This resulted in the generation of ideas and new techniques for science teaching at all levels on the themes mentioned. A meeting was held subsequently in Zimbabwe in 1990, which involved African teachers and curriculum developers, generating African materials for African schools on socially relevant aspects of the science they teach.

The inclusion of science in the primary school curriculum can provide an extremely efficient vehicle for teaching the skills of communication and of numeracy and for doing so in a natural integrated manner. Most important, however, is the concept that science teaching should be child-centred. Husen and Keeves point out that the way in which children solve problems is essentially a scientific way of working. School experiences need, therefore, to build on what children do naturally. Scientific enquiry is valuable because it helps children learn about their surroundings in a way which is natural and acceptable to them, by practical exploration relying heavily on sensory experience. Involvement and discovery help the child to communicate. Activity-based curricula can allow children to gain concrete experience of the world (Haddad, 1986; Walberg, 1991; Ogunniyi, 1995).

Still, there is debate about how integrated science programmes should be developed. Gunstone (1985) comments that:

> *"Despite much work, there still remains a remarkable diversity of views as to what integrated science is, what programs might be integrated and how content should be selected for them".*

Although these are real problems, agriculture can contribute to their solution by providing an excellent vehicle for the contextualisation of science in several ways. First, as we have seen, it can help children to overcome the problems associated with words, meanings and contexts derived from unfamiliar environments and cultures.

Secondly, agriculture provides many opportunities for problem-solving activities. As Husen and Keeves (1990) point out,

> *"Science could be characterised as concerned with understanding why...the enquiry approach of science is perfectly adapted to the psychological nature of pre-adolescents. It is in the nature of young children to be active and inquisitive"*

Agriculture can provide practical activities which are grounded in scientific processes. This relationship places the emphasis on the processes of science rather than the content. Agriculture can also provide a means of allowing children to develop, carry out and evaluate their own research projects; as a result, the nature of scientific enquiry is experienced rather than "taught". This can enable children to compare, analyse the benefits and constraints and identify linkages between traditional farming methods and "modern" methods (Yakubu, 1994). George (1988) describes how school pupils in the Caribbean study "modern" technology in order to develop problem-solving skills and to become aware of the social implications of the introduction of modern technology in a developing country, whilst at the same time recognising and developing the capacity of indigenous technology. Valuable work has been carried out also on the in-service training of secondary school teachers in Swaziland to enable them to develop and produce contextualised science materials (Lubben et al, 1995). Through contextualised teaching and learning, children can develop their capacity for meta-cognition, and hence reflect critically on their own practices and experience; this may have a positive impact in the long run on agricultural innovation, production and rural development.

## *5.4 Contextualising Mathematics*

Just as development of science-related skills and literacy are important for children, so is mathematics. Yet it is probably the subject most frequently cited as being a barrier to advancement through the school system. Some governments actually make mathematics a non-compulsory subject area for promotion to secondary school or to further education. The result of this is that an individual can proceed through several levels of the education system without being numerate. University entrance criteria in many developing countries are based on the attainment of a qualification in mathematics, since this is the factor which lends itself most easily as a cut-off point in a list of potential candidates.

Balfanz (1988) considers how the mathematical knowledge children develop on their own, outside of formal school instruction, can be used to increase the distribution and level of mathematical knowledge attained by students. Clements and Jones (1981) described a case study from Papua New Guinea which detailed the learning processes of a child who came from a society which did not have names for numbers; still it was evident that there was mathematical knowledge in the society, but conceptually quite different to the standardised, western-oriented version. Damerow (1986) notes that social and cultural conditions are strong determinants of the acquisition of mathematical skills, as are the organisational structure of the school system and the nature of classroom practice and interaction.

In the primary school curriculum in the Indian State of Meghalaya (1990) it is noted that:

> *"The main objective of mathematics curriculum is to develop in the child the competencies which are relevant to real life situations that requires mathematical thinking, understanding of mathematical principles, knowledge and information about the social and economic application of mathematics. The mathematics curriculum at the primary stage should be related and relevant to the needs of a child as an individual and the society, hence huge stresses should laid more on the development of concept, skills and attitudes".*

Agriculture can play a role in contextualising mathematics, just as it can for science, since it allows children to conceptualise mathematical principles as they relate to experiences with which they are familiar. Even if their vernacular language does not have terms for numbers, agricultural examples could be used to draw on the meanings which do exist in that culture, and bridge the gap between the two knowledge systems. Instead of creating despair over the abstractness of routine arithmetic calculations, the recognition that mathematics contains elements familiar to the lives of children outside school can help to reassure them, and hence build self-confidence and increase motivation. At the same time, it was observed earlier that agriculture integrated into the curriculum can help to improve literacy rates, and this in turn should have a positive impact on the level of numeracy in children.

## 5.5 Contextualising Food, Nutrition and Health

Turner (1987) suggests that in order to achieve health for all, teachers must try to find ways to incorporate nutrition education more fully and effectively into the curriculum. She notes that successful teaching largely depends upon local initiatives and the level of co-operation between the school and teachers and the local community rather than implementing ideas produced by outside experts. It is unusual to find nutrition education as a separate subject in schools in any part of the world (Calloway et al, 1979), and it is accepted, usually, that it should be incorporated into other subject areas. At primary level, nutrition education very often forms part of thematic studies which include literature, mathematics, history and geography as well as science. Agriculture, food, nutrition and health are, by nature, very closely related, and it should be possible to define themes which integrate agriculture and nutrition into learning experiences in other aspects of the curriculum.

A survey by Turner and Ingle (1984) highlighted the variety and range of teaching approaches utilised in teaching nutrition in many countries, particularly in primary schools. Drama, poetry, music, art were included in the subject areas in which teaching about food and nutrition featured in addition to mathematics, geography, history, science and technology, physical education and home science (UNESCO, 1983). This approach was based on the use of the local environment as a basis for activities which encourages children to be curious about their surroundings, to observe, explain, experiment and communicate their ideas and findings (Baez, 1980).

Turner (1987) describes the ways in which many primary school topics related to nutrition are frequently incorporated within a scheme which forms a part of an integrated programme of work and which includes aspects of health education and agriculture. A study of staple food, for example rice, cassava, or bread could be based on a visit to a local farm, market or the school kitchen. Work in science and mathematics can be extended by germinating rice grains and measuring the growth of seedlings. Food can be integrated into studies of geography and religious ceremonies, in order to better understand social and economic factors. Children can then learn more about the complex interactions governing attitudes to food, and hence learn about agriculture at the same time. Activities related to school gardens or farms can also provide a rich source of low-cost, easily available classroom material.

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## 5.6 Contextualising Social Studies

Agriculture can be used as a means of preparing students to cope with sensitive biology-related social issues. The issue of birth rates and population control, for example, could be dealt with in an agricultural context by examining the impact of changes in the population rate on agricultural production systems; this combines social issues in relation to both agriculture and biology, hence facilitating a two-way flow of information and a build-up of knowledge of farming systems and biological principles within a social context.

Knamiller (1984) notes that environmental issues are equally amenable to this treatment, since children have a wealth of environmental knowledge on which to base learning. Issue-based studies may help to sensitise young people to local development problems, bringing about a positive impact in the community.

It may be possible to deal with gender issues in a similar way. Krugly-Smolska (1995) reports that it is important to begin the process of changing cultural stereotypes in children before they leave primary school. Since farming activities in many parts of the world are performed by women and girls, the relevance of the agricultural context may be even greater for girls than for boys, especially if they are active in the process of metaphor and analogy construction. This could lead to the development of greater self-confidence in girls, and hence greater motivation to remain at school, helping to redress the problem of higher drop-out rates for girls than for boys at primary school level.

Finally, Krogh (1990) points out that as children mature, it is possible to move from ego-centred social studies to a focus on the rest of the society. By integrating the theme of agriculture into the curriculum, a domain of personal experience for most children in rural schools becomes the basis for primary school learning; this may help children make the difficult transition from orientation towards the individual to an orientation towards society.

## 5.7 Application of the theory into Practice

The argument presented in this section has demonstrated that learning in primary schools can be enhanced by contextualising the subject matter, by relating it to the environment and experiences of the learners. It has shown, too, that agriculture may be used as a nurturing vehicle which can support the development of learners whose needs are extremely diverse, and whose life experience has been enriched by agricultural practice. Contextualising learning can bring the learner into the heart of the learning process and help to strengthen the links between school, home and community, which in turn enhances the effectiveness of learning in primary schools. This relationship has reciprocal benefits.

The discussion so far has been theoretical, as its purpose has been to explain the meaning of contextualisation and the implications of its use. A research study was developed which set out to investigate whether the theory discussed above had a grounding in reality by posing a number of questions. *Do teachers in rural primary schools contextualise learning in practice? Do they attempt to create an integrated learning system? What prerequisites are needed for contextualisation to take place? What factors constrain its application in the reality of the classroom situation? What are the roles and perceptions of teachers, parents, policy makers, and of course, the learners themselves?* In order to make decisions about which countries would provide a source of information for the case studies regarding the practice of contextualisation, the literature was reviewed in an effort to gather information about existing practice. Section 6 presents a summary of these findings.

# 6 The Role of Agriculture as a Contextualising Subject in Primary School Education: Examples of Practice from the Literature

There are many accounts in the literature relating to developments in rural primary schooling. Some of these describe new programmes and educational innovations at the planning stage, and are useful in illustrating the range and diversity of strategies employed and their various locations throughout the world. Other accounts provide a theoretical perspective but, in addition, present a balanced account of positive and negative lessons learned as a result of the experience. This is of great value since the development of future strategies can be made considerably more effective by paying heed to the problems and weaknesses encountered during educational reforms as well as to successes and strengths. A selection of these accounts are presented below. They form only a very small sample of the full range of educational reforms attempted over the last twenty-five years throughout the developing world, but they were selected for their relevance to the focus of this research, the contextualisation of teaching and learning in rural primary schools.

## *6.1 Malaysia*

Seymour (1974) described curriculum development in Sarawak, which is primarily an agricultural state. In order to move away from the traditional production oriented approach to agricultural education, a "New Syllabus" was introduced. This integrated the subject matter of the lessons during the first two years, in order to "reinforce the learning of one subject by the learning of another" (p. 281) The syllabus indicated approaches and techniques to make the subjects more relevant to the experience of the student. While the curriculum was not especially designed for rural schools, teachers in training were taught how to use the agricultural and rural experiences of their students to convey scientific laws and processes more clearly. However, many teachers could not understand the value of integrating subjects in lesson units, since this method seemed to make it more difficult to coach the learning of the basic skills. Regarding the agricultural emphasis, teachers seemed to pay lip-service to this, because in their eyes children came to school to become literate and not learn what they already know and try to escape from. Different groups had different perceptions of the purpose of primary education; the administrators wanted to provide education that would assist national development; the teachers wanted to prepare some students for secondary education; the parents seemed to want increased upward social mobility. Teachers appeared to be so focused that even when teaching science and health, which have useful and practical applications in the tropical agricultural environment, they did not use the recommended visual aids, demonstrations and field work exercises. This could be accounted for to some extent by the limited education, abilities and expertise of teachers. Since these participants differed so much in their perceptions of the purpose and process of schooling, there was a problem in achieving a level of co-operation which would ensure that students were taught in the way they were supposed to be. Seymour stressed that since different groups (administrators, teachers, parents and students) share different values, perceptions and experiences and exist as subcultures, each can influence the acculturative process of the school at various stages either directly or indirectly. Different interpretations of educational goals and content among administrators, teachers and parents can influence teachers so that there may be a discrepancy between curricular objectives and instructional activities. This would have broad implications for the effectiveness of using agriculture as a means of contextualising learning.

## *6.2 Uganda*

Massey (1987) describes the Namutamba-"Basic Education Integrated into Rural Development" (BEIRD) curriculum development project in Uganda, which infused agriculture and appropriate technology into the curricula of teacher colleges and primary schools. The main period of the project ran from 1971 to 1979, but it was being revitalised in 1986 in order to address five basic problems: the lack of life-adaptive knowledge and skills among rural primary school graduates; a BEIRD organisational structure at national, district and community level; a curriculum that integrates practical and academic instruction; a BEIRD pre-service/in-service teacher training system and materials; and adequate primary school teaching materials and methods.

### 6.3 Cameroon

Bude (1985) notes that primary schools in the anglophone region of Cameroon have, since the 1960s, attempted to use the local environment for the development of cognitive abilities and also as the animation centre for community development. In the Francophone provinces, early efforts to increase the relevance of the curriculum seem to have foundered, whereas in anglophone provinces "a certain type of community orientation has for decades been an established part of the primary school curriculum and also of school-community relations". In addition to using locally relevant experience, schools have also forged and developed strong links with their local communities by supplying various services, for example agricultural advice to farmers.

### 6.4 Jordan

Badran, Baydoun and Subbarini (1987) describe how, in 1978, agriculture (production-oriented) disappeared from the school curriculum as a separate subject, followed by a subsequent disappearance of related topics from the science syllabus. More recently, reconsideration of the place of agriculture in the curriculum has brought about the realisation that the objectives of science education can only be attained by relating science to real, concrete situations, involving particularly the interaction of humans and the environment. Agriculture thus provides an ideal area from which pupils can acquire an understanding of scientific concepts and develop scientific skills and attitudes. A framework has been suggested which attempts to integrate agricultural education as a major element of the science syllabus in the Jordanian elementary school system.

### 6.5 Papua New Guinea

Goelenboth (1987) describes "village orientated topics" in Papua New Guinea primary schools. Since most students do not proceed to secondary education, schools use agricultural related topics in order to provide students with skills which will assist in direct material improvement of village life after their graduation. It was proposed that education could be enhanced if there was a concentration on the key topics which are relevant to the agro-ecological conditions in the appropriate region. Such programmes appear to have shown that it is possible to improve conditions in the villages and thus encourage young people who have acquired relevant skills to remain there after completing school.

### 6.6 Sri Lanka

Peiris (1976) and, more recently, Baker (1988) described an integrated approach to curriculum development in primary education in Sri Lanka. The basis of the curriculum was that children should carry out activities related to their own experience, using subject content as and when necessary in their work (through a project approach, planned well in advance and focusing on identified knowledge, skills and attitudes). Ideally the children would need no external pressure to work because the nature of the work itself would generate an enthusiasm producing an internal self-discipline. As a result they would be made more responsive to their own environment. Imitation of the work of others in classrooms and attempts to walk along well-trodden paths would be firmly discouraged, whilst creativity in all spheres of physical and mental activity would be positively fostered. A new curriculum was devised, therefore, setting up general guidelines for each content area. This involved listing experiences for primary-level children and placing them in relevant blocks of a cube, the three dimensions of the cube standing for time, place and human needs. A Teachers' Handbook for grades 1 and 2 were devised, which attempted to help the teacher to organise integrated learning through project work, at the same time paying attention to building up basic skills, e.g. language and mathematics. A child development studies project was set up to find out how the children develop concepts in mathematics. A spiral curriculum was devised to accommodate the needs of the teachers and the students in small rural schools, where a teacher was in charge of more than one grade. Although the preparation of the overall curriculum was centrally controlled, flexible guidelines were provided, and teachers were given freedom to draw up their lesson units and teaching sequences using the materials available locally. A problem noticed was that discovery-learning, advocated as a crucial component, was hampered by the fact that literature and materials available for children did not meet the requirements of variety or suitability. To fill this gap, a new project was introduced to produce resource reading materials which would meet the needs of the new curriculum.

### 6.7 Tanzania

Elstgeest (1987) notes that primary education in Tanzania is the only formal education some children will get. The purpose of primary education is, therefore, to provide and use experiences and to

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exercise skills which enhance the growth of understanding. In order to achieve this, children must be faced with problems that they can handle (according to their developmental level). By asking questions based on their own experience, the children can respond positively and build on their confidence and, therefore, their motivation. An example is given of the fifth grade class in Kigururnyembe, Tanzania, where children used equal amounts of soil, using washers and nuts as units of weight. They then translated their findings into a picture, and proceeded to establish what amount of water their soils could carry. Another example was of children counting the number of seeds in a cob of maize to assist them in developing skills in numeracy. When the children set out to count the seeds, they were surprised that there were 470 seeds, as many of the children had a vague idea of large numbers. Elstgeest notes that the children can learn that by manipulating and controlling the environment they can influence and control the response and behaviour of living things in certain ways; this demonstrates a particular value of agriculture as a contextualising subject.

### *6.8 Brazil*

Harbison and Hanushek (1992) describe the introduction of the Northeast Basic Education Project (EDURURAL), set up in 1980 as an integrated educational programme. It was financially supported by the World Bank and the government as a single-purpose educational programme, which was aimed to target the least developed areas, and besides other things, assist in the development of curricula especially designed to the poor rural environment, where drop-out, repetition and non-attendance rates were very high. Only 40% of the primary school teachers had themselves completed primary school. EDURURAL was an ambitious social programme that sought to raise achievement by providing standard packages of incremental learning resources to a large number of schools. It was designed to expand children's access to primary schooling, to reduce wastage of educational resources inherent in grade repetition and dropout as children progressed through the system and to increase achievement by improving the quality of instruction. The EDURURAL project succeeded in the final two years of evaluation in improving delivery of the desired inputs, at least in two of the three states, but the change was only modest when comparing the inputs of the rural areas with these of the urban areas. In particular, wastage declined more rapidly in EDURURAL schools but there is no evidence that the EDURURAL project improved pupil flows as promotion rates did not increase. The programme contributed in setting up new schools and expanding others. Overall, however, there is little evidence that EDURURAL contributed directly or indirectly to school survival.

### *6.9 Kenya*

Black *et al* (1993) describe the Kisumu School Improvement Project. This was launched in 1990 in response to increasing doubts in the 1980s over the relevance of the school curriculum, imbalances between supply and demand of educated manpower, widening gaps between urban and rural standards and participation and a concern about the education of girls. Developments in this case were to come from the "bottom" and were to be creative; the strategies and teaching styles were to be appropriate and stem from the teachers and the identified needs of the children; they were to be classroom based (since the reality of the classroom must be the measure of success or failure); they were also to be holistic, with learning activities covering the whole range of children's emotional, physical and cognitive needs. Some of these activities were agriculture-based. The results appeared to be an improvement in children's attitudes and motivation and led to higher attendance rates. Although there was an initial intention to allocate differentiated tasks to the individuals and to encourage group work, Black *et al* (1993) note that this did not happen to a great extent; still the children did appear to gain self-confidence. There was, apparently, a surprising lack of involvement in projects or in work which integrated subject topics, this being explained by the rigidity of the Kenyan curriculum. It was also noted, however, that although the same pre-set curriculum was followed, teachers felt less obliged to stick rigidly with it. The positive results observed may have been influenced by the relatively high level of resources made available to the schools, and this does then raise questions regarding reproducibility and sustainability, although not all the schools within the Kisumu group received the same resource inputs.

Sifuna (1993) describes the development of the Kenyan "8-4-4" system during the 1980s, and notes that, although there is a tendency for teachers to teach towards examinations (due to pressure on children to qualify for secondary school), "teachers were of the opinion that, using the environment in teaching-learning situations enables children to appreciate and understand the world around them". This is encouraging, since it is noted that there appears to be a grass-roots belief in the value of basing learning on the experience of children. The emphasis placed by policy-makers on entrance

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examinations and academic progression, however, and the subsequent stress this places on schools, results in less effort being made to capitalise on community and pupil experience. Passing examinations and coaching for this goal takes precedence.

### *6.10 India*

a) Black *et al* (1993) describe the Bombay School Improvement Programme which began in June 1989. This aimed to find concrete ways of addressing the problem of children's learning difficulties, to reduce the drop-out rate and improve community contacts in order to enlist the understanding, support and interest of the community; it was hoped that this would encourage children's motivation to learn. The overall aim was to foster child-centred learning, envisaging a move away from traditional textbooks towards curriculum materials developed by the teachers. Much of the advantage of such a move is predicated on the assumption of a rich resource alternatives for pupils both in the school and in the home. Some teachers thought, however, that this meant a move from textbooks to no textbooks at all; in fact it was intended that this child-centred teaching method could be introduced without replacing traditional textbooks. Moreover, parents were concerned that their children would not be able to learn in more traditional environments in the future if new methods of teaching were introduced in the primary school. At the end, the main difference in the teaching style was the greater emphasis on groups or individuals. The project has broadened the opportunities to develop higher-order skills as well as personal and social skills, and the children seem to have developed these to a greater extent. Black *et al* (1993) note that child-centred learning does have resource implications; there should be enough space and resources within the classroom as well as outside it. This particular program involved one school in Bombay, which received resource inputs sufficient to allow the initiative to be tested and evaluated. Whether the results observed would be reproduced in schools where very few resources were available would be a matter for further investigation. In order to develop this type of improvement programme, teachers need also to receive thorough guidelines on how to implement the school curriculum and good materials to support their teaching. This has implications for teacher training. There are difficulties in adopting child-centred methods; teachers have to learn how to teach and children have to learn how to learn in the context of interactive groupwork. There is, however, ample scope to produce teaching materials which are more supportive of child-centred teaching methods than the traditional textbooks.

b) Seshadri (1993) describes the Comprehensive Access to Primary Education (CAPE) project, launched in 1979 and implemented in 17 states in 1987-88, linked with the Primary Education Curriculum Renewal (PECR) programme. PECR has "developed relevant local specific learning experiences through decentralised curriculum planning. The learning experiences are drawn from the child's environment and the curriculum is directed to the attainment of certain essential competencies by the child". Also noted is the UNESCO project "Teaching of Science and Technology in Rural Areas", developed at the Regional College of Education, Mysore, which is "based on the rural child's knowledge of traditional science and technology in the socio-cultural context of rural areas of India". Seshadri stresses the importance of building on the strengths of rural children, rather than maintaining a "patronising" attitude towards them because they are thought of as disadvantaged.

### *6.11 Colombia*

Colclough and Lewin, (1993), and Colbert *et al* (1993) describe the development of primary school education in Colombia. In the 1980s, the urban primary NER was about 90%, whereas that in the rural areas was around 65%, with only 1 in 5 children in rural areas completing primary education. Cost units per child in the rural areas were much higher than those for urban schools, which meant that there was low internal efficiency of rural education directly related to the paucity of resources available to rural schools. Academic schedules were rigid and were reported not to take account of the special needs for rural pupils to help with agricultural and other chores. In the early 1960s, the Unitary School Programme conceived by UNESCO was initiated. One teacher was required in each school to help children to teach themselves, children were allowed to advance at their own pace, teaching materials were designed in order to help the teacher work with many groups of students, the key elements were instructional cards or subject guides which gave more autonomy in learning to the pupil. Children could then leave for agricultural work and then come back and work at their own pace. The problems, which made it impossible to generalise the programme throughout the rural areas in Colombia, were that although it dealt with the learning process at the level of the child, the programme failed to address the fundamental concurrent changes needed in the national curriculum, in teacher-training methods, and in the local supervision of the system, for the programme to be a success. "Escuela Nueva" then began in 1975, building upon the experience with Unitary schools. The new curriculum allowed the possibility of teachers to make their own adjustments in line with local circumstances. This provided practical problem-solving experiences. The criterion for advancement was the ability to apply knowledge within the community. Links between the community and the schools was emphasised, and the use of local materials was advocated. Teachers were given training and material incentives. Central authorities retained responsibility for the design of the programme and for providing practical support, whereas the training and implementation became the responsibility of regional and local officials; in practice this meant that curricula especially designed for rural areas could be more easy to introduce when teachers were trained locally. Escuela Nueva had 4 major aims: to provide a full 5-year primary course in all rural areas through multigrade teaching methods; to improve the internal efficiency of rural education with increased relevance, flexibility and new evaluation procedures; to reduce drop-out and repetition; to improve human and material inputs and reduce expenditure. The Escuela Nueva students scored higher in academic achievement tests. Teachers also believed that it was superior, and it enhanced their participation in community activities. Nevertheless, despite improvements, the quality of schooling was still lagging behind that in the urban centres.

### 6.12 Ethiopia

The Ethiopian Institute of Curriculum Development and Research (ICDR) (1993) described the development and trial of the "general polytechnic curriculum" in 70 pilot primary schools. The environment and experience of the pupils is supposed to be integrated into all subject areas. The use of local, agricultural examples to facilitate learning in mathematics provides an illustration of this. Problems faced include language difficulties (trying to establish Amharic as the medium of instruction), shortage of resources (books, teaching aids, tools, water and electricity) and availability of teachers trained to use the new methodology required of them. This innovation is no longer in operation, however, under present government policy.

### 6.13 Zambia

Chelu & Mbulwe (1994) describe the Self-Help Action Plan for Education in Zambia (SHAPE). One of the main aims of the programme is to improve the quality and relevance of education. The programme has tried to improve and strengthen certain types of learning in order to achieve quality and relevance. These are:

- relating science, mathematics and languages more to the local environment;
- developing a wider variety of skills, e.g. literacy, numeracy as well as practical problem-solving skills, etc.;
- developing individual potentialities, e.g. initiative, responsibility, creativity;
- developing positive attitudes, e.g. towards work, local cultural traditions, preservation of natural resources;
- developing a healthy balance of learning and working to suit individual interests and future needs.

### 6.14 Guatemala

Little et al (1994) describe a curriculum adaptation process, SIMAC (National System of Human Resources Improvement and Curriculum Adaptation), at a local level which involves the establishment of a close relationship between the school and the world surrounding it. Teachers and pupils, as well as parents and other members of the community, have the right to participate critically and constructively in developing and carrying out effective and relevant learning experiences. SIMAC has been designed to shift the emphasis from a teaching-based curriculum towards a learning-based curriculum and from a content-based curriculum to a process-based curriculum. This integrates academic areas, methods and procedures within the learning process and is closely linked to the needs, interests and problems of the pupil and the community. It relates school life to the world that surrounds the child and teaches the child how to share and live with other people in a responsible, creative and critical way. Pedagogical practices are used which assume that learning, amongst other factors, starts from the reality which surrounds the child (family and community).

### *6.15 Lessons Learned*

These case studies reveal that a wide range of efforts have been made to improve teaching and learning in rural primary schools, and some of the studies (particularly those from Malaysia, Tanzania, Kenya, India, Colombia and Brazil, discussed above) provide considerable insight into the successes and difficulties associated with the development of educational innovations. Some important points to note are as follows:

- approaches to curriculum development vary considerably;
- the way in which the curriculum is designed and the way in which it is implemented at school level may be quite different;
- "teacher factors" are of great importance. Teachers seem not to be adequately trained (either through pre- or in-service), or sufficiently motivated (with adequate remuneration and sufficient length of posting) to develop integrated teaching methodologies. The Ethiopian ICDR (1993) expresses this point well:

  > *"Because primary teachers in their one year of pre-service at the teacher-training institute with a 17 subject curriculum receive little exposure to methodology they tend to rely upon their own experience as primary school pupils and teach as they were taught: using rote learning and chalk and talk. Creativity, flexibility, innovativeness and improvisation are talents primary teachers may possess but they are infrequently displayed. Since each teacher teaches only his or her special subjects in several grades the necessary integration of culture and environmental content and concerns across various subjects is quite difficult"* (ICDR, 1993).

- a number of other factors seem crucial in order for teaching and learning to be improved:
  - availability of books and materials developed to meet the needs of an integrated curriculum and the locality of the school;
  - access to relevant resources (farm, practical facilities, not necessarily owned by the school);
  - support by the local community/parents;
  - participation between the school, local community members and all relevant stakeholders in the development of educational programmes;
  - sustained government support;
  - examinations tailored to the requirements of the curriculum.
- curricular reform cannot solve all the problems faced by rural schools; complementary social and economic reforms must go hand in hand with curriculum development;
- contextualisation of learning in rural schools is a strategy which has been attempted in various educational programmes, illustrated by those examples above where an effort has been made to relate the content of the curriculum to the local environment. A number of difficulties are shown to be associated with this, including the constraints placed upon teachers by workload, general conditions and lack of experience as well as the driving force of examination-oriented learning which acts against the introduction of more flexible approaches to teaching and learning;
- some teachers do believe, apparently, that using the environment in teaching-learning situations enables children to appreciate and understand the world around them. In rural areas, therefore, agriculture could provide a unifying theme, since it is familiar to the lives of most rural children.

These examples from the literature reveal a number of benefits, but at the same time there are many critical factors which can lead to the success or failure of the strategies described above. In order to shed more light on these factors, and in an effort to gain a real understanding of what contextualisation means in practice, case studies were carried out by the authors in four countries, Tanzania, Sri Lanka, India and Ethiopia. The findings of these case studies are presented in detail in Volume II of this paper, but an overview of the research process is presented in section 7, in order to provide a basis for the discussion of issues and implications in section 8.

# 7 The Research Study

## 7.1 *Aims of the Field Research*

The purpose of the field research was to gather information about schools which have used agricultural experience of learners as a means of contextualising teaching and learning. The research examined the implications for teaching and learning practices, resources, school management and teacher training, and evaluated the impact of this practice on school attendance, school performance, development of school-community links, and on teacher, pupil and parental attitudes. Case studies were used to examine the capacity of agriculture to act as a familiar vehicle for the development of young rural learners' basic skills of literacy, numeracy, and other life skills which are perceived as necessary for a fruitful and productive life. The research attempted to highlight the problems which may arise in attempting to use agriculture in such an innovative way and aimed to identify examples of good practice which would be of use to educational policy makers and practitioners.

## 7.2 *The Research Questions*

Based on the above aims, the main research question was developed:

- *To what extent have rural primary schools attempted to use agricultural experience as a means of contextualising teaching and learning?*

This main question was then sub-divided into nine specific research questions:

1. To what extent is contextualisation of teaching and learning reflected in education policy statements at different levels?
2. What practices have teachers developed and used in order to contextualise learning?
3. What are the existing levels of knowledge, skill and attitude amongst teachers towards the process of contextualisation?
4. What are the attitudes of learners, community members and policy makers towards contextualisation?
5. What evidence is there to suggest that teachers use agricultural experience as a means of contextualising teaching and learning?
6. What factors enhance or constrain the use of agricultural experiences as a means of contextualising teaching and learning?
7. What is the impact of contextualisation on the process of teaching and learning?
8. What is the role of contextualisation in strengthening and developing linkages between the school, home and community environments?
9. What are the implications of contextualisation for educational planning and practice in the future?

## 7.3 *The Research Methodology*

The methodology was designed specifically for this research to find answers to the research questions detailed above. It proved through the use of a qualitative, triangulated approach to be very successful in meeting the aims of the research. The selection of countries for the study was made entirely on the basis of published papers that included, either directly or indirectly, some reference to contextualising teaching and learning in rural primary schools. In some cases (Tanzania and India) direct contact was made with the authors of the papers, who then became the collaborating partners. In the other countries (Ethiopia and Sri Lanka), following contact with the authors, recommendations were made to find appropriate collaborators.

Designing the methodology was a long process and required modifications before and during the fieldwork. The process started with the design of a table that detailed the key issues (identified from the research questions), methods of data collection, potential sources of data and the type of data to collect in order obtain information on the issues. Following this, eight case studies were carried out; these were located in two rural primary schools in each of four countries. Field work of one week in each school was undertaken to obtain an understanding of the particular school in relation to the key issues. Schools were selected by the collaborating partners following a set of guidelines, the most important being as follows:

- One case study school was recognised as an "innovative" school, where a school is perceived to be innovative if it conforms to some or all of the following:
    - there is a degree of flexibility in the curriculum, either in the basic construction or in the way the teacher interprets it and teaches it;
    - children are encouraged and able to discuss issues in class;
    - some attempt is made to use children's out of school experience in the learning process;
    - teachers use and/or develop resources based around children's out of school experience and knowledge;
    - there is some degree of continuous assessment;
    - parents and community members have some involvement with the school;
    - there is an attempt to use local technology in teaching and learning (resources relevant to local community and easily obtainable);
    - there is some degree of integration of subject matter across the curriculum;
    - some evidence of teacher support;
    - some element of decentralisation.
- The second school was in the same vicinity as the first, but did not necessarily need to have a reputation for innovation (an 'average' school).
- Brief overviews of two more rural primary schools were undertaken through one day visits, in order to provide more supporting data for the case studies.

In the schools, data collection was through informal, semi-structured interviews and three participatory activities, namely order ranking, matrix ranking and mapping. Separate questionnaires were constructed for the headteacher, teachers (2 groups of 4 teachers per school), pupils (group interviews of 6 - 8 per group) and community members (group interviews of 4 - 6 per group). Matrix ranking, which involved ranking ten methods of learning against each other by preference, was undertaken by pupils and teachers. Pupils also completed mapping diagrams, a drawing activity that was designed to illustrate 'what pupils did at home', 'what pupils did at school' and whether there were any learning connections between the two environments. Classroom observations, along with the participatory activities, provided supporting evidence to the interviews and more information on the teaching and learning processes in the schools.

Semi-structured interviews were held with key informants (policy makers, educationalists, researchers, etc.) to obtain their views on the present state of education in the country. Appropriate literature and reports were also consulted to provide background information on the national, regional and local contexts of the school.

Full details of the methodology can be found in Volume II of this report.

## *7.4 Summary of the Country Studies*

Volume II of this report comprises four, detailed case studies based on the research in Tanzania, Sri Lanka, India and Ethiopia. In the following section, the conclusions from the findings are given only.

### *7.4.1 Tanzania*

The findings of this research indicate that, in Tanzania, a very large gap exists between the plans made by centralised curriculum developers and educational policy makers on one hand and the reality of daily life in schools on the other. Problems exist in both urban and rural schools, some of which are very similar, such as dilapidated buildings and a lack of equipment, and others which are more area-specific. Urban schools tend to have much larger class sizes, of up to 150 pupils. Rural schools still suffer from large class sizes, but not to the same degree. On the other hand, rural schools suffer because their development depends largely on parental contributions, which in turn depends on parental perceptions of the value of education; many rural people have very little cash income and are becoming more reluctant to spend it on education which seems to be failing their children and themselves. This is because the goal of many parents is for their children to give them economic support in future years. This is less likely to happen if their children do not gain a place in secondary school, are unable to find employment, or lack the skills and knowledge which would enable them to set up business on their own. Hence the anticipated rates of return are much less, and the investment dries up from the grassroots. Teachers also are becoming demotivated as their salaries remain low and are difficult to obtain, especially in rural areas where transport is lacking or extremely expensive. Schools in rural areas also lack access to information, there being few radios or newspapers available, and even fewer visits from schools inspectors who have no transport to reach the remoter schools.

Many of the teachers who contributed their views in this research are disillusioned with their working conditions and the lack of opportunity for professional development. Constant curriculum changes, an inflexible examination system, few secondary school places and an over-reliance on books and materials which cannot be obtained are strangling the process of teaching and learning. Teachers resort frequently to physical punishment. Teachers' salaries are insufficient for normal living expenses. In order to ameliorate this situation, headteachers may try to reward their staff in some way, perhaps by giving them small presents occasionally, funded by proceeds from the school *shamba*, but this is impossible where a school has no land or opportunities for income generation. As a result, teachers *"cannot afford life"*, as one headteacher put it, and look for other opportunities for income generation to the disadvantage of their pupils. For all these problems, some teachers are committed to their profession and "*love teaching*", saying that they would like to continue their careers as teachers. Many teachers interviewed, including some of those who are frustrated with their lot, mentioned that teaching is an important way of serving the community and of helping others.

A particularly worrying issue is the evidence for a link between parental income and educational progression of school children. Those who can afford it will pay for extra tuition for their children. If their children fail to gain a place in government secondary schools, they may pay for a place in a private school. The rate at which private schools, and even community-built day-secondary schools are increasing is worrying in itself, as the pool of experienced secondary school teachers is becoming more and more thinly spread. Thus the quality of teaching may be threatened at this level also. There is even the suggestion that teachers may deliberately underteach during normal lesson time to ensure that enough pupils will demand that their parents pay for "tuition". The quality of "tuition" itself is also suspect in some cases. According to one respondent, teachers advertise themselves as *"good"* teachers by dressing well and appearing confident in order to impress parents. *"When they see us with good clothing, they think we are good teachers"*.

Contextualisation as a means of improving learning is close to Nyerere's original concept underlying "education for self-reliance". Teachers like the idea of it, as long as they feel in control of the situation to some degree, and are encouraged to adopt it as a strategy during their pre-service training programmes. The benefit of having a *"picture in the mind"* when learning was mentioned on several occasions. Parents appreciate the idea of linking schooling to the home environment, as long as intimate details and confidentialities are not betrayed. Pupils describe the learning process at home as easier than at school because there is the absence of pressure from time, and because they are not called upon to deal with complex abstract concepts. If these preconditions for effective learning could be incorporated partly into school learning, the level of achievement might be improved; many respondents cited overloading of teachers and pupils resulting in exhaustion and boredom and the complexity and irrelevance of the curriculum as major obstacles to learning and performance. The obstacles are sometimes increased by schools inspectors, who, on their rare visits to schools, are likely to be focusing on achievement of educational objectives through transmission of content rather than through an integrated learning process. Teachers may even be reprimanded for attempting to use innovative teaching methods which stray from the rigid structure of the teacher's guide.

There is certainly potential for agriculture to be used as a means of contextualising learning in rural Tanzanian primary schools where it is common that more than 95% of pupils come from an agricultural background. An important point arising from this country study, however, is that agriculture varies tremendously from region to region, and even from village to village. The income of farmers may also vary considerably, as does the level of their education. There are implications here for the strategies a teacher must adopt in order to relate a child's agricultural experience to the content of the curriculum, since it is essential to take into account this diversity of experience as well as to be sensitive to the nature of the child's home environment, be it financially and educationally supportive or quite the opposite.

It is important to note that a gulf between community and school priorities will have a deleterious effect on the effectiveness of teaching and learning practices. As stated by the District Academic Officer, *"if authority at school is with the teachers and at home is with the parents, the pupils are* *caught in the middle*". It is necessary to enable parents and teachers to work more closely together, in order to create a healthy climate in school. Appropriate teaching and learning strategies which link the home and school environments may help to bridge this gulf but in order to do this, teachers require training and support, and pupils and parents require information and reassurance that those aspects of their culture which they value are not threatened.

This study adds strong support to the idea that professional development of teachers is seen as a key to improving pupils' learning. Parents want to see the teachers of their children equipped to perform to their full capacity. Pupils expect teachers to be able to deliver the goods, enabling their children to progress to secondary school. Teachers rank training and support as the most important inputs they need. Policy makers want to see the teachers in their region receive training in order to motivate them and enable them to be more effective. Developments are taking place in other regions and districts to try to address this, such as the creation of teachers resource centres (funded by Dutch and Danish aid programmes), and the development of locally relevant curricula (funded by German aid programmes). Interventions such as these in the District where the research was carried out would be of great value to everyone involved in teaching and learning.

### *7.4.2 Sri Lanka*

Sri Lanka's education system has been developed over many centuries, and at present offers free education for all from year one through to university level. It has made concerted efforts to improve the quality of education, and a high literacy rate (88%) and low drop-out rate (4%) are among some of the country's achievements. Despite these and many other high achievements, the problem of remoteness and difficulty of access to rural primary schools still remains an unresolved problem, which in turn affects the effectiveness of these schools.

At present rural primary schools in Sri Lanka face many problems and the case study findings revealed the following general problems:

- Inequitable distribution of resources, both human (lack of trained teachers) and physical (lack of equipment), exist between urban and rural primary school;
- Many disparities in the education system, especially between urban and rural schools;
- Poverty and health (malnourishment) are major problems which affect the pupils education;
- Handwriting skills are very bad because the pupils have no facilities in order to practice at home;
- Few reading materials are available to the pupils, such as newspapers, and many RPS's have no library;
- There are no media facilities such as television and radio;
- Many of the pupils will be unable to continue their schooling after year 9 because there are no transport facilities available;
- Classes are overcrowded and teachers are unable to manage in large schools due to poor skills in classroom organisation;
- Rural primary schools are getting smaller and teachers are not motivated in these schools as they receive no attention from school authorities (inspections or Master teachers);
- In some cases there is little parental support and lack of co-operation from the community;
- There is high absenteeism of pupils and teachers;
- Lack of infrastructure. Although transport on public buses is subsidised, often the problem is lack of bus service;
- Substantial variation between schools, divisions and provinces in the availability and deployment of primary teachers;
- Lack of incentives for all teachers, including primary level teachers, to serve in disadvantaged areas;
- Restricted opportunities for primary teachers to develop their careers within the field of primary education.

Apart from these general problems there are many macro-problems which specifically affect the effective functioning of rural primary schools, and especially those found in the poor and disadvantaged sectors of society. Interviews with officials from the National Institute of Education and findings from the field work identified many areas that need urgent action. Recent studies (NIE, 1995) have revealed that achievements of primary school children in Mathematics, Language and Life Skills are disturbingly poor and that disparities in achievement levels are usually high between urban and rural pupils and between those belonging to different provinces; less than 30% of primary level pupils complete schooling with mastery levels in numeracy and literacy.

Often teachers working in rural schools view their pupils as being ignorant because they come from low level socio-economic groups. These pupils, the majority of whom are likely to come from farming backgrounds, lead harsh lives in which their contribution to the family income must often come before their education. This leads to high levels of absenteeism during peak times in the agricultural year. The case studies illustrate that many children have very responsible jobs working on the farm, looking after the home and caring for younger brothers and sisters. They often work long hours and survive on low nutritional diets. They have little time and often no facilities for studying at home. No special support is offered to teachers in rural primary schools, and only a few selected schools get support from private donors. Many rural primary schools rarely, if ever, get visits from educational inspectors or master teachers who are often overworked, especially in rural areas where accessibility is difficult.

At present the education system is very examination oriented with children in years 1 and 2 already attending private lessons in preparation for the national scholarship exam in year 5. Many of those interviewed stated that the year 5 exam put too much pressure on pupils and should be eliminated. Consequently, slow learners, disadvantaged groups and the majority of the rural population are neglected in terms of the resources for their schools and by an urban biased curriculum. The learning needs of the rural sector are often different from those of the urban sector in terms of pupils' ambitions, opportunities available to them (many are physically unable to continue with their education because of transport problems) and parental attitudes to their education.

In the past few years, Sri Lanka has revised the primary school curriculum in an effort to move towards a 'pupil-centred' approach to learning. Teaching is, however, still 'teacher-centred' and this is primarily due to the pressure on teachers to cover the curriculum and prepare pupils for the national year 5 scholarship exam. Although the curriculum has been revised, the country is still working under the same education system, which needs to adapt in order that curriculum changes may be implemented successfully. Some educationalists believe there is an imperative need to modify the curriculum so that it is less academic and more orientated towards life skills and social skills. In academic subjects there needs to be more self learning, experiments and problem solving skills. More community involvement is needed along with more exposure to external situations so that children's general knowledge is improved. At present the curriculum is not really relevant to the lives of rural school children. Although the curriculum allows for some degree of flexibility by the teacher, during the fieldwork it was evident that few teachers knew this, or had any idea how to go about implementing their ideas. Teachers frequently stated that a contextualised approach to teaching and learning is a good idea, but they need more training and support in methods for implementing such an approach.

Contextualising teaching and learning is not recommended specifically in Sri Lanka's educational policy. The country is looking towards 'life long learning' with activity based curricula and self-learning activities, but these are not being practised. An external donor has undertaken a pilot project, however, which closely follows the theory and practice which underlies the contextualisation of teaching and learning, through the use of an agriculture plot and nutrition programme. Generally agriculture is considered to be a poor and uneducated person's livelihood. Using agriculture as a means for contextualising teaching and learning could lead to parents interpreting this as school agriculture lessons which are unpopular in some countries. During the case studies, however, this was rarely given as a constraint by parents. In fact, on a number of occasions, parents said that such an approach would make their children "*better farmers*". There is clear evidence from the pilot study in one school that such an approach makes learning more enjoyable for pupils and teachers, and parents seem also to appreciate it. During interviews with all sectors of the local community, the agricultural experimental plot and the nutrition programme in this school were referred to constantly. The community also is involved through the school providing a type of extension service following experiments it carries out on the agriculture plot.

### *7.4.3 India*

India is a vast country with great variations and divides in culture, language, caste, religion and gender both between and within states. The immense population, the majority of whom live in rural areas, uneven development, and striking differences between the urban and rural populations, create an infinite and ever changing task for the country's development of education. Although enrolment is high, drop-out rates are also high and achievement levels are low. Nearly half of the population is illiterate, and the large disparity between sexes results in over 60% of adult illiterates being female.

India has declared that it will provide Education for All by the year 2000. This in itself is a huge undertaking, and will involve expansion of early childhood care and development, universalisation of elementary education, reduction in literacy, and provision of opportunities to maintain, use and upgrade education. Improving the content and process of education should be a high priority, *'to better relate to the environment, people's culture and with their living and working conditions, thereby enhancing their ability to learn and cope with the problems of livelihood and environment'*. A recent report by the National Advisory Committee (1993), however, looks at the 'burden of learning' in the education system and the main problems associated with it, namely the emphasis on an education to gain elite qualifications, rather than a competence for doing useful things in life. This report states that *'both the teacher and the child have lost the sense of joy in being involved in an educational process. Teaching and learning have both become a chore for a great number of teachers and children. ... the majority of our school-going children are made to view learning at school as a boring, even unpleasant and bitter experience'*. Competency levels in reading, writing and numeracy of primary school children are estimated to be very low; at most only 30% of children have adequate competencies in these areas. Undue importance has been given to 'memory', instead of developing 'thinking' capabilities. To be effective, rural primary schools should equip the students to face the realities of the environment in which they live, and this is not being achieved in the current education system.

Teachers, parents and pupils all agreed that learning is easier when out of school experience is used and related to what is taught in school through the formal curriculum. They say it helps them understand things better, apply knowledge in practical daily life situations and see the relationship between knowledge from school and real life situations. Teachers confess they don't practice this pedagogy for a number of reasons. Teachers are generally unhappy with the training they received and feel that more support in this area would enable them to try out innovative teaching methods such as contextualising teaching and learning. They do not have the necessary skills to relate school knowledge to the daily life experiences of pupils because this was not covered in their training. At present schools have almost no input in curriculum development as responsibility is at state level. The curriculum is not relevant to the lives of the pupils, and there are many teaching-learning areas that cannot be related to practical, concrete real-life situations. The majority of teachers feel they can do little to improve their teaching practices, considering the lack of facilities and harsh conditions they work under. The rigid structure of the timetable, pressure on them to "cover" the curriculum according to a prescribed plan and the narrow requirements of the examination system allows them no flexibility to adopt innovative teaching methods. Teachers find it easier and feel more secure if they teach through books, which does not require great effort or creative, imaginative planning of learning experiences necessary for innovative teaching.

The belief that knowledge is gained by reading books and that it has very little to do with work or experience seems fixed in the minds of many parents, and is transferred to children also. Teachers feel answerable to parents, and presenting them with good exam marks will satisfy them; teachers and schools are held accountable through reference to exam results. The acquisition of such knowledge, measured through examination results, reinforces the belief that the concern of the school is to transmit knowledge to children in such a way that they can assimilate and reproduce it in the examinations. The curriculum and textbooks are essentially knowledge centred, with occasional reference to activities of a practical nature.

There is a lack of motivation and accountability amongst many teachers, especially in rural schools where there is limited scope and opportunity for professional improvements. In rural areas there is very little opportunity of recognition or appreciation of good, innovative work by these teachers. Regular monitoring and training, they believe, would encourage their professional development and increase motivation of themselves and their pupils. In terms of initial impressions of the two schools, there was a distinct difference. School A was well maintained and attractive to look at. On the other hand, school B was hardly recognisable as a school from the outside as it had no boundary and appeared run-down and neglected. The atmosphere within in the two schools again was noticeably different. Pupils appeared happy and enthusiastic in school A, in school B they were passive and shy. Even from this small case study it is evident that co-operation between the headteacher, teachers, and community members is vital in forming a supportive learning environment for the pupil. The fieldwork illustrated that teachers', parents', community members' and pupils' perceptions of education and their views on knowledge are important factors in using a contextualised approach to teaching and learning. Their perceptions of agriculture are important if such an approach were to use agricultural experience. The role of a good teacher, invariably, is of one who is knowledgeable and a repository of information. Learning is also seen as something done out of a book and transferred to an exam paper. The desperately low competency rates in basic subjects illustrates a need for change in the education system. The community should play an important role in changing parental perceptions of education, and contextualising the process could be an important approach to achieving these aims of developing 'thinking' rather than 'memory' capabilities, along with strengthening linkages between the learning environments of school, home and community.

### *7.4.4 Ethiopia*

Ethiopia has over the past few decades seen many changes to its education system due to economic and political change. A document by the Transitional Government of Ethiopia (1994) states that there has been a gradual decline in the quality of education which has been pronounced in the past two decades. Factors such as scarcity of instructional materials, overcrowding, inadequate school buildings and a decline in the quality of teacher training have contributed to the problem. Moreover, the curriculum lacked relevance with no clearly defined objectives. Instruction concentrated more on theoretical knowledge with little connection to daily life. The approach lacked problem solving skills with a high tendency towards rote learning. Participation rates at all levels were very low with disproportionately low female representation, and the few schools available were mainly located in urban areas. The government (1994) states that almost all of the junior and secondary schools, with a total enrolment of 12% of the eligible age group, are located in the medium and large towns. Nearly 60% of rural communities have no schools. The poor access to primary schooling for children in rural areas was revealed during the fieldwork when a number of children said that they had walked long distances, taking up to two hours, to attend school. Poverty is another main reason for not attending school as children are needed to work at home where food production is likely to be a higher priority than education. During the fieldwork it was clear that many children, both boys and girls, are involved in agricultural activities daily. Pupils mentioned that homework had to be done at school because they had too much work to do at home. Overall enrolment rates are low; UNICEF (1995) estimate the primary school enrolment ratio (gross) at 25% over 1986-92.

Ethiopia's Education Sector Strategy (1994) states that *'the main objective of any educational system is to cultivate the individual's capacity for problem solving and adaptability to the environment by developing the necessary knowledge, ability, skill and attitude', 'in this respect the existing educational curriculum of Ethiopia had not been properly developed to meet the societal and pedagogical demands', 'the curriculum is irrelevant and with no clearly defined objectives, the teaching concentrates more on theoretical knowledge with little connection to day to day life. The approach is not problem solution and students mainly rote learn'.* The strategy for education frequently refers to the use of the pupil's experiences in teaching and learning, the need for more innovative teaching methods and the need for more relevance in the curriculum such that, *'the content of the curriculum will be revised to be relevant to the needs of the community', 'the science teaching will emphasise application and will be properly linked with day to day activities of the student', 'the teaching/learning process shall emphasise problem solving by making the curriculum more relevant and by adopting appropriate teaching methods'.*

There was little evidence to suggest that teachers knowingly contextualise their teaching and learning practices in the schools visited. Reasons included a general lack of resources, time constraints, overcrowded classrooms and poor teacher training that does not prepare teachers for using innovative teaching methods, or for making use of local resources in their teaching practices. A new curriculum has been developed for use in primary level teacher training, and this follows the objectives of the new educational policy. Trained teachers, however, have only received minimal training in using the new curriculum and most teachers interviewed were disappointed with the level of training they had received in order to implement the new curriculum. During fieldwork, discussions with teachers revealed a keen interest to know more about the idea of contextualising teaching and learning. As a process it was not one they were familiar with, but they felt it would be quite easy for them to practice because of pupils' daily contact with agriculture. A major objective of the previous curriculum was 'education for production'; so agriculture was taught as a separate subject and all schools had agriculture plots and agricultural teachers. The new curriculum for basic education focuses on a general curriculum where agriculture is incorporated into subject areas such as science.

In the 'innovative' school, teachers were trying hard to make learning relevant to pupils. During interviews with pupils they were able to easily identify areas where agriculture had been brought into subject areas. The most frequent example given was measuring land area in a maths lesson. Teachers gave examples, such as a maths lesson in which pupils were asked to calculate the number of radishes they could plant in a certain area. They say that implementation of ideas and concepts involving agriculture are taken up more and greater interest is shown. In this particular school, pupils placed a strong emphasis on teachers being able to *'explain by giving illustrations and examples so that lessons can be easily remembered'*; they also mentioned that a good teacher *'uses different teaching methodologies'*. Generally parental attitudes were agreeable to such an approach. They appreciate their children telling them about their school work, particularly if parents also gain something from their children's schooling, for example new agricultural technologies or practices to improve general health. Where practices have been transferred to the community (e.g. vegetable growing and water filtration), it has proved to link the community with the school and has improved parental awareness of the importance of a basic education. Many teachers are past pupils of the school which appears to have helped in linking the school and community.

Agriculture as a subject was incorporated previously into curricula so resources for initiating a contextualised approach to teaching and learning, through the use of agricultural experience, are in abundance. As the majority of children come from agricultural backgrounds, and experience agricultural practices daily, it is an area extremely familiar to them. Parents' and teachers' attitudes to a contextualised approach to teaching and learning are very positive. Teachers already try to use pupils' experiences in their teaching practices but many feel they do not have sufficient training to enable them to use this knowledge effectively in teaching new concepts. The new curriculum is relevant to pupils' lives and does allow teachers to use their own examples and bring outside experiences into classroom learning. Despite the poor condition of schools and a general lack of resources, teachers state their main problem is insufficient training to enable them to implement the new curriculum.

### 7.5 Issues and Implications from the Research Findings

In this section, summaries of the main conclusions of the case studies have indicated key areas of importance which emerged during the research, both in terms of general issues relating to rural primary school education, and some specific issues relating to contextualisation of teaching and learning.

The final section of this report will highlight some of the most critical issues, and discuss some implications of contextualising teaching and learning which arise from the literature and from the findings of the field research. These may be of value for the future development and application of the concepts presented in this paper.

# 8 Issues and Implications from the Research

## *8.1 Issues*

### *8.1.1 Recognition of contextualisation of teaching and learning in education policy statements.*

The education policy statements of many countries emphasise the importance of relating the content of the curriculum and the processes of teaching and learning to the local environment. In most countries a national curriculum is still produced centrally, although there is a tendency towards decentralised educational planning. This latter movement is compromised somewhat by the retention of control over a national examination system by central planners. Contextualisation of teaching and learning is not mentioned explicitly in national policy documents, but the underlying concepts appear to be appreciated and approved by those in positions of influence at a national level. The desire is expressed often to make the curriculum relevant to the local environment, and to encourage teachers to develop teaching practices which relate the content of the curriculum to the local context. What is lacking in most situations, however, is the support and infrastructure at local level to enable teachers to put the policy into practice. A number of national and international NGOs and donor agencies are encouraging teachers to develop and use innovative practices such as improved and more appropriate methods of teaching and learning, and alternative ways of interpreting the curriculum. In time, influence such as this may bring about a more widespread realisation of the value of contextualisation by national policy makers and encourage them to facilitate its practice through interventions at local level.

### *8.1.2 Teachers efforts to contextualise learning.*

The most common pedagogical approach used in rural primary schools in developing countries is still "chalk and talk". When chalk or a blackboard are not available, the result is teachers talking. Pupils in the "average" schools visited in this research were rarely required to participate actively in lessons, other than to repeat by rote what had been said by the teacher or to sing and clap. Project work and topic-based learning were not in evidence in the majority of the schools. In all four countries in the study, the school timetable is divided into short periods and is subject-based, so that teachers are impelled to cover a certain amount of the subject matter as laid down in the teachers' guide. Teaching aids and materials, particularly those which relate to the local context, are often in short supply or lacking altogether. Regular teacher absences means that a great deal of "catching-up" has to be done as well, leaving little time available in the lesson for teachers to try anything other than "banking" of knowledge. Evaluation of learning is also extremely difficult for teachers in those countries where large numbers of pupils crammed into small desks in a dark classroom is the norm. Demotivation of teachers due to the many constraints which they face on a daily basis tends to discourage interest in the development of innovative practices, and the absence of regular support means that those teachers who do experiment with alternative teaching and learning methods feel unsure and unconfident whether they are on the right track.

Even with these constraints, however, there is evidence from the field research and from the literature that many teachers do attempt to contextualise learning by relating the content of the curriculum to the experience of their pupils. This is achieved by using examples with which pupils are thought to be familiar. Health and nutrition topics are often related to the home situation. Where agriculture is taught as a subject area, the pupils' experience of their family's farming is drawn upon in many cases. Even though such strategies are common, it becomes clear from the case studies that the majority of teachers who use such a practice are not aware of its real potential. They realise that pupils seem to understand an abstract concept more easily when examples are given with which the pupils are familiar. Planning of such strategies seems rare, however. Often examples are given on an *ad hoc* basis when it becomes clear that a concept is proving difficult to understand. Some teachers interviewed during the research stated that the value of using locally relevant examples had been discussed during pre-service training, but they could not recall or suggest ways in which such a practice could be planned. Some teachers' guides and pupils' textbooks use examples which are supposedly familiar to children, but many of these examples are urban-based, or are actually unfamiliar to a large proportion of the school population.

Photo 1 'free drawing activity', India (School A)

Views expressed by teachers through interviews and ranking exercises suggest that they appreciate the value of contextualising teaching and learning and would like to learn more about it. The researchers experienced difficulty initially in reaching a common understanding of the concept of contextualisation with teachers. In fact, teachers were being asked to reflect on their pedagogical practice in this research, and it was clear that they were rarely called upon to do this explicitly in their normal working lives. From ranking exercises, teachers in all the countries studied stated that they preferred to give examples and use practical activities as a means of helping pupils learn. The way in which teachers interpreted certain pedagogical practices varied, however. "Practical" activities in some schools meant pupils writing exercises, for example. The discussions which emanated from the ranking exercises did help to highlight these differences. Pupils also interpreted methods of teaching and learning in different ways, which emphasised the complexity of methodological planning for teachers with limited awareness of pedagogical approaches or the confidence to use them.

Photo 2 'geography lesson', Ethiopia (School A)

On several occasions, teachers stated that they had learned a lot from being involved in the research process, and would even use some of the methods developed to gather information in their own teaching. On two occasions when return visits were made to case study schools, innovative strategies were observed being put into practice; for example a class in India carrying out "free drawing" (Photo 1) and a group of pupils in Ethiopia creating a map of the village in the school garden using earth and sowing flower seeds (Photo 2). This suggests that the practice of some teachers may be influenced greatly by support and opportunities for professional development.

### *8.1.3 Evidence for the use of agricultural experience by teachers as a means of contextualising teaching and learning.*

In rural schools, agricultural experience and materials from the local environment are utilised by some teachers as a basis for teaching and learning. The case studies reveal some examples where pupils bring in agricultural materials such as plants and seeds, or foodstuffs, which are then used to illustrate abstract concepts. This technique was found to be used in mathematics teaching (Photo 3). Pupils were sometimes taken by their teachers to the school garden or neighbouring farms where they performed activities which are based on and related to non-agricultural subject areas such as geography. Farming themes are frequently used as a basis for language teaching, and agricultural topics and examples appear in many school textbooks, such as the examples provided earlier in this report.

**Photo 3** 'mathematics lesson', Sri Lanka (School A)

### *8.1.4 Factors which influence the use of agricultural experiences as a means of contextualising teaching and learning.*

The research has revealed a number of factors which seem to influence the use of agricultural experience as a means of contextualising teaching and learning. Firstly, support for teachers seems crucial. This may come from the headteacher, from pupils, from other teachers, parents, policy makers and schools advisors or inspectors. Donor support or recognition of a school as a "model" or "pilot" school does seem also to raise the prestige of the school in the locality. This in turn seems to be a motivating factor for teachers and pupils, and encourages community members and parents to be more supportive of the school and its activities.

The influence of the headteacher in a school seems central to the development and use of innovative teaching practices. Where a collegial atmosphere is created, and staff of a school feel that they can discuss freely problems and complex situations with each other regardless of position in the school hierarchy, experimentation and innovation has an opportunity to flourish. Support from the local education authority is also important. In some cases, schools inspectors discourage teachers from attempting to use alternative methods of teaching and learning for fear that the situation might go out of control. Although national policy statements favour the use of contextualisation in schools, teachers' guides do not seem to reflect this, and so teachers feel wary about moving away from what is laid down on the printed page, even though they may be surrounded by rich and varied resources outside the classroom and school environment. The rigidity of many primary school curricula discourages teachers from moving beyond the boundaries of the subject area, and frequent curriculum changes leave teachers feeling that they have enough to cope with just to cover the subject matter. Large class sizes, shortage of time, and a lack of confidence in dealing with classroom organisation all contribute to teachers feeling that they cannot move easily beyond the use of traditional talk-based teaching.

Some rural schools do not have land or gardens on which they can carry out agricultural activities, and it is felt by teachers that this constrains the use of agricultural examples in the teaching of other subject areas. A lack of knowledge of local agricultural practices is cited by many teachers as another reason they are reluctant to draw on agricultural experience; pupils may have more knowledge in this area than the teachers. This should not be seen as a major constraint however; since most rural schools are surrounded by vast areas of agricultural land; many local farmers are themselves parents of school pupils, and often would welcome visits from teachers and pupils.

### *8.1.5 The attitudes of primary school pupils, community members and policy makers towards contextualisation.*

Just as the teachers favour the process of contextualising teaching and learning, those pupils, community members and policy makers interviewed seem also to think that it is a practice worth utilising and would like to explore its potential. Many respondents stressed how important it is to base new learning on what is known already. There is no doubt that education is still viewed as being a very important factor in the lives of young people, and a successful outcome of primary education is expected, especially bearing in mind the considerable investment made in it. Generally, the main target for pupils at the end of primary schooling is to pass their examinations. Many members of rural communities who have a very low income are prepared to offer part of the little money or materials they have to assist with the development of their local school or, in some cases, to further the chances of their children progressing to secondary school by paying for private tuition. Parents and pupils interviewed were of the opinion that schools should do whatever is necessary to give pupils the best chance of achieving a successful outcome from primary schooling. A strategy such as contextualisation which seems, logically, to lead towards better opportunities for school pupils to perform well is very attractive to them.

There are certain attitudinal issues which work against contextualisation being used effectively, however. Discussion of home life and the domestic situation is taboo in some societies. Some parents feel uncomfortable with the knowledge that their children may discuss openly what is thought to be intimate and private to the family. Discussion between children and parents is often difficult anyway, due to societal norms about acceptable relationships between adults and children. Many children emphasise the value of learning to be respectful to elders and find speaking openly to a teacher in a class rather daunting. This situation does depend on the attitude of the teacher as well, however. Teachers who had established a rapport and unthreatening relationship with the pupils in their class are more likely to tolerate and welcome classroom discussion, and even pupils presenting ideas or writing on the blackboard. For some teachers, this type of activity is very threatening, and it was stated even by teachers who were supportive generally of contextualisation that there was a high risk element involved when asking pupils to talk about their experiences openly.

### *8.1.6 The role of contextualisation in strengthening and developing linkages between the school, home and community environments.*

Earlier in this report it was stated that the learner can play a vital role in strengthening linkages between the three "learning environments" of the school, the home and the community. Contextualisation can, in theory, enable the learner to link the learning experiences in these three environments. The teacher, by contextualising teaching and learning can facilitate this process. From the research findings, it becomes clear that this does happen.

Parental support for their children's schooling is an important factor; parents in rural communities seem to find it easier to understand what their children are learning when it is based in a context with which the parents themselves are familiar. They feel able to talk to their children and are not embarrassed by their apparent ignorance of "school knowledge" if the learning, even that centred around abstract concepts, is familiar to them. From discussions it was noted that many children relate differently to their fathers than to their mothers. Evidence from the studies suggests that fewer mothers have completed or had the advantage of primary education than fathers. In many societies, young children seem to communicate more easily with their mothers than with their fathers, for social and cultural reasons, and mothers who cannot relate to the experience of schooling may become frustrated, as do their children who feel unable to talk to them about what they have learned at school. This emphasises the importance of girls' education, as those who become mothers themselves will have to face a similar situation; maternal support to school children would seem to be a very critical factor. Lubben et al (1996) have noted that at secondary school level, girls seem to find contextualised materials more attractive, and these may assist them to learn difficult concepts more effectively than through traditional methods which tend to favour boys. At primary school level an implication of this is that, through improved teaching and learning, the numbers of girls who leave school with higher levels of achievement and qualifications may increase. In turn this may result in greater numbers of female teachers, and also more women with a more positive perception of schooling, therefore encouraging more girls to attend school. Contextualised teaching and learning may become a positive factor in improving the opportunities for girls to achieve success in primary schooling.

In the field research there was considerable discussion with pupils, teachers and community members about what "real learning" consists of. School pupils from several countries wondered whether learning subjects through the medium of agriculture was "real". What is learned at home, and particularly, what is learned about agriculture through personal experience seems often to be undervalued because of the elevation of school learning to a more prestigious position. Integrating agricultural experience into more traditional "academic", and hence more highly valued, subject areas may help to break down the barriers between the different learning environments, and thus create a more conducive learning context. It is vital, however, that any agricultural component or reference introduced through a process of contextualisation is integrated in an appropriate and meaningful way. Parents should be aware that reference to agriculture or the local environment is not diminishing the value of schooling in any way, but instead creating the potential for an outcome from primary education which they feel is very desirable for themselves and for their children. Otherwise there is a strong likelihood that such an innovation would be rejected outright.

## *8.2 Implications for contextualising teaching and learning*

The research findings show that the learning environment in many rural primary schools still leaves much to be desired. In particular the following problems, which were identified during the field work, seem common to most rural primary schools:

**The School Environment**

*General problems in the school system*

- Inequitable distribution of resources, both human (lack of trained teachers) and physical (lack of equipment), between urban and rural primary schools;
- disparities in the education system, especially between urban and rural schools;
- falling enrolment in many rural primary schools, and unmotivated teachers in these schools as they receive no attention from school authorities (inspections or master teachers);
- substantial variation between schools and regions in the availability and deployment of primary teachers;
- lack of incentives for all teachers, including primary level teachers, to serve in rural and disadvantaged areas;
- restricted opportunities for primary teachers to develop their careers within the field of primary education;
- low salaries which are not paid on time;
- poor conditions (housing, transport).

*Pedagogical problems:*

- lack of in-service training or support for professional development;
- lack of knowledge and skills in terms of content, methods of teaching and teaching aid development;
- teachers unable to manage in large schools due to poor skills in classroom organisation;
- overloading.

*Problems relating to the curriculum*

- new curricula being introduced but not ready on time, and constantly changing;
- teachers are not consulted about curriculum development;
- overcrowded curricula with too much content to cover in the time available;
- textbook and teachers' guide development and availability does not keep up with changes in curriculum;
- recommended equipment and resources not available, especially for practical activities;
- much of the content not relevant to the lives of rural children;
- more emphasis needed on "foundation" subjects (maths, science, English, agriculture);
- lesson periods too short and restrictive.

*Physical problems within the school*

- few reading materials available to the pupils, such as newspapers, and many rural primary schools have no library;
- few media facilities such as television and radio and often no access to an electrical supply;
- overcrowding and large classes;
- high absenteeism of pupils and teachers;
- lack of teaching aids;
- lack of textbooks and teachers' guides which often do not arrive on time;
- lack of stationery and no money available to buy materials;
- shortage of classrooms;
- buildings in poor condition;
- shortage of desks and furniture (cupboards, tables, chairs);
- school area too small which restricts the space available for a school garden/agriculture plot or a sports field;
- few first aid facilities or a trained first aider;
- shortage of teachers' housing;
- either no staffroom or insufficient space for staff;
- inadequate school security.

**The Home Environment**

- poverty which leads to pupils being kept at home to work on the farm, to look after siblings or to work in other labour;
- poor health and malnourishment of pupils;
- no facilities available for pupils to do school work at home;
- parents cannot afford to buy their children basic equipment (pens, chalk) for school;
- no parental support; a demotivating factor for pupils;
- lack of parental awareness to the importance of their children's education.

**The Community Environment**

- lack of co-operation from the community in aiding the school;
- poor infrastructure (transport) preventing pupils from continuing their education in areas where secondary/high schools are not nearby;
- occasional desire by community members to control school activities;
- unreliable water supply or absence of clean water locally;
- vandalism at the school

### *8.2.1 Conditions necessary to introduce innovative teaching and learning methods*

Certain conditions in rural primary schools make innovative approaches to teaching and learning difficult to introduce. The most crucial appear to be:

- large class sizes;
- too many short lesson periods per day, each allocated to a different discipline;
- lack of basic materials for teaching aid development;

- lack of support by schools inspectors and teacher trainers who fail to visit schools, or try to enforce traditional practices which are inappropriate;
- lack of in-service training and support which could free teachers, mentally, to experiment;
- poor motivation of teachers;
- increasing numbers of young teachers entering teaching who would prefer to be doing something else and are incapable of teaching large sections of the curriculum;
- the inflexible, centralised curriculum development and examinations system.

Certain conditions do support the use of contextualised teaching and learning in rural primary schools, however:

- enthusiasm of teachers to do the best for their pupils;
- enthusiasm of pupils to perform well;
- enthusiasm and support of many parents for schooling, especially from those who have themselves received an education;
- a willingness amongst parents to encourage their children to discuss their schooling, and to offer help with problems and recognition of their achievements in school;
- the supportive nature of teachers towards each other, especially from the headteacher;
- the close relationship between many rural schools and their surrounding community;
- improved progression rates of primary school pupils to secondary schools, taking some psychological pressure off teachers ;
- the vast resource base surrounding schools, which is almost entirely agricultural;
- the real demand from all parties for teachers to be provided with professional development in terms of pre- and in-service teacher training;
- teachers who hail from the local community in which the school is located;
- the presence of an agriculture teacher in the school, or teachers who have a knowledge and understanding of the local agricultural context, in order to use agricultural experience as a means of contextualising teaching and learning;
- land available within the school, for agricultural-based activities.

Teacher training and support is a critical factor if the process of contextualisation is to be adopted in rural primary schools. Teachers need to reflect on their pedagogical practices, and to question their attitudes towards "real learning". Many teachers do use a range of excellent practices on a daily basis, but they may not be aware that they are in fact doing this. Awareness of successful approaches to teaching and learning will certainly contribute to the development of more innovative strategies. Finally, if teachers, pupils and community members can develop a view of education as a good in itself, then there is a far greater chance of building a learning environment which has a chance of achieving real success.

## *8.3 Opportunities for Further Research and Intervention*

This research has revealed many opportunities for further research into the contextualisation of teaching and learning in rural primary schools. There does seem to be potential for some of the many problems discussed in this paper to be addressed through the development of models and strategies for education programmes which are based on a process of contextualisation. As discussed here, attempts have been made to adjust the content of the curriculum so that it becomes relevant to local conditions by introducing "localised" topics and activities, for example, through the "community school" movement. Teachers rarely have been involved in this process, however, and relatively little emphasis has been placed on the development of appropriate strategies for curriculum development or teaching and learning based on the immediate context in which the school is located. The process of contextualisation enables teachers in primary and secondary schools to interpret the content of the curriculum (which may be designed nationally, or at local level but still non-negotiable) by relating it explicitly to the local environment, and this may prove to be a means of implementing the rhetoric of decentralising the curriculum process.

As described above, prerequisites for such a process to yield successful outcomes include favourable school structures and systems and a supportive policy environment. Opportunities should exist for cross-subject work and whole-staff development. The support of parents is vital, especially where strategies utilise the integration of pupils' home experience into the learning process. Parents should be aware, therefore, that a contextualised process of education will not inhibit their children's access to activities outside rural areas. The existence of productive, complementary linkages between school, home and community is of great importance, and it is necessary to break down existing barriers. Contextualisation of the curriculum will by its very nature involve the wider community, thus making it accountable to the community in which it is taught. It is desirable that parents increase the level of their support for the school-based education of their children. An holistic approach to community education, which addresses the learning needs and aspirations of community members both in and out of school, for example involving literacy programmes, may help to overcome many of the problems associated with the provision of education in rural areas.

With these points in mind, it is suggested here that the following areas are worthy of research and intervention:

- encouragement and facilitation of the development of educational practices (teaching and learning strategies, development of learning materials, assessment and evaluation procedures, curriculum development), which value and take into account the knowledge, experience and culture of members of schools and the wider community;
- provision of training and support for teachers and trainers in rural primary schools and in the local community who will base strategies for teaching and learning on a process of contextualisation;
- facilitation of the development of structures and functions in schools and training organisations which complement and support the process of contextualisation adopted by teachers;
- evaluation of the impact of contextualised learning on the development of knowledge, skills and attitudes of learners, in schools and in the wider community;
- evaluation of the impact of contextualised learning on community productivity levels, employment, and on academic progression of learners and teachers;
- studies of the effect of contextualisation strategies on parental opinion of the value of schooling.

As a result of research and intervention in these areas, the following outcomes may be achieved:

- self-supporting groups of teachers and trainers with the capacity to adapt and develop curricula, within the framework of educational policy, through a process of contextualisation;
- creation and adoption by rural schools and training organisations of structures and functions which support and enable the process of contextualisation;
- readily adaptable, sustainable resources of innovative methods and materials for training, teaching and learning, shared and disseminated through networks of teachers and trainers;
- strategies and models for planners and practitioners which may facilitate the integration of experience and knowledge of learners into basic and community education programmes in different locations;
- indicators and guidelines for decision makers at national and international level to consider when planning the overall structure of school and community education programmes, and to assist donors in making policy decisions relating to educational funding.

The research on which this report is based has shown that many teachers, community members and policy makers have demonstrated the willingness and ability to innovate in order to create the most effective learning environment for children in rural primary schools. Considering the difficulties faced in schools in rural areas of many countries throughout the world, teachers in particular are to be wholly commended, encouraged and supported in their goal to enable children to benefit from schooling.

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EDUCATION RESEARCH

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## List of Acronyms

**General**

| | |
|---|---|
| DfID | Department for International Development |
| EFA | Education For All |
| GER | Gross Enrolment Ratio |
| GNP | Gross National Product |
| INSET | Inservice Education and Training |
| NER | Net Enrolment Ratio |
| NGOs | Non-Governmental Organisations |
| RPSs | Rural Primary Schools |
| TTI | Teacher Training Institute |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation |
| UNICEF | United National Children's Fund |

**Tanzania**

| | |
|---|---|
| DAO | District Academic Officer |
| DEO | District Education Officer |
| ESR | Education for Self-reliance |
| MANTEP | Institute of Manpower Training for Educational Personnel |
| PSLE | Primary School Leaving Examination |
| SBC | School Betterment Committee |
| REO | Regional Education Officer |
| TADREG | Tanzania Development Research Group |

**Sri Lanka**

| | |
|---|---|
| A/L | A Levels |
| GCE | General Certificate of Education |
| MOA | Ministry of Agriculture |
| MOE | Ministry of Education |
| NEC | National Education Commission |
| NIE | National Institute of Education |

**India**

| | |
|---|---|
| DDPI | Deputy Director of Public Instruction |
| DIET | District Institutes of Education and Training |
| DPEP | District Primary Education Project |
| ECCE | Early Childhood Care and Education |
| MLL | Minimum Learning Levels |
| NCF | National Curriculum for Elementary Education |
| NPE | National Policy on Education |
| PMOST | Programme of Mass Orientation of School Teachers |
| SBC | School Betterment Committee |
| SC | Schedule Casts |
| SOPT | Special Orientation Programme for Primary Teachers |
| ST | Schedule Tribes |
| SUPW | Socially Useful Productive Work |
| TCH | Teachers Certificate Higher |
| UEE | Universalisation of Elementary Education |
| VEC | Village Education Committee |

**Ethiopia**

| | |
|---|---|
| ICDR | Institute of Curriculum Development and Research |
| MOE | Ministry of Education |
| PEAP | Primary Education Assistance Project |
| SPC | School Pedagogical Centre |

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# 1 Introduction

This report illustrates the findings from the second phase of a research project commissioned by the Department for International Development (Education Division), titled 'Contextualising the Curriculum in Rural Primary Schools: the role of agriculture'.

The second phase was commissioned following the findings of an initial desk study (Taylor, 1995[1]), which set out to examine how agriculture could be used as a means of contextualising the primary school curriculum in rural areas. The purpose of the initial desk study was to examine the role of agricultural experience as a vehicle which can support the development of learners in rural primary schools whose needs are extremely diverse, and whose life experience has been enriched by agricultural practice. This involved a review of literature which sought to investigate a "new role" for agriculture as a key element of primary schooling. In particular it examined from a conceptual point of view, and through the use of case studies from the literature, the capacity of agriculture to act as a familiar vehicle for the development of young rural learners' basic skills of literacy, numeracy, and other life skills which are perceived as necessary for a fruitful and productive life. The intention was not to explore issues relating to teaching agriculture as a distinct subject area in the curriculum.

The purpose of the second phase of the research was to gather information about schools which have used agricultural experience as a means of contextualising teaching and learning, by looking at the implications for teaching and learning practices, resources, school management and teacher training, and to evaluate the impact of this practice on school attendance, school performance, development of school-community links, and on teacher, pupil and parental attitudes. Case studies were used to examine the capacity of agriculture to act as a familiar vehicle for the development of young rural learners' basic skills of literacy, numeracy, and other life skills which are perceived as necessary for a fruitful and productive life.

At the same time the research aimed to highlight the problems which may arise in attempting to use agriculture in a way which may challenge its traditional role as a vocational subject area. The study aimed to identify examples of good practice, and based on these, highlight issues of importance to educational policy makers, teachers and other interested parties.

The case studies for this research project were carried out in four countries: Tanzania, Sri Lanka, India and Ethiopia, between July and December 1996. In each country, apart from Ethiopia, field work took 2 to 3 weeks. In Ethiopia, logistical problems meant that field work had to be completed in one week and consequently the case studies are shorter than in the other three countries. A detailed methodology is given at the front of this volume. Volume I should be consulted for the theoretical background and issues and implications arising from the research.

---

[1] Taylor, P. (1995), Contextualising the Curriculum in Rural Primary Schools - the Role of Agriculture. A Research Report to the Department for International Development. The University of Reading.

# 2 Methodology

### 2.1 Design of the methodology

The methodology was designed specifically to identify issues and implications of the main research question '*to what extent have rural primary schools attempted to use agricultural experience as a means of contextualising teaching and learning?*'. The process started with a brainstorming session to construct a set of sub-questions which would be used as the basis for the questionnaire:

1. To what extent is contextualisation of teaching and learning reflected in education policy statements at different levels?
2. What practices have teachers developed and used in order to contextualise learning?
3. What are the existing levels of knowledge, skill and attitude amongst teachers towards the process of contextualisation?
4. What are the attitudes of learners, community members and policy makers towards contextualisation?
5. What evidence is there to suggest that teachers use agricultural experience as a means of contextualising teaching and learning?
6. What factors enhance or constrain the use of agricultural experiences as a means of contextualising teaching and learning?
7. What is the impact of contextualisation on the process of teaching and learning?
8. What is the role of contextualisation in strengthening and developing linkages between the school, home and community environments?
9. What are the implications of contextualisation for educational planning and practice in the future?

These research questions were then used to identify key issues, methods of data collection, potential sources of data, and the type of data to collect, in order to obtain information on the key issues. This information was displayed in tabular form and was continually updated throughout the period of research methodology formulation. It was also used during the fieldwork as an important reference document and checklist.

Designing the methodology was a long process and required modifications before and during the fieldwork. It was envisaged that questions by themselves would not provide a sufficient standard of qualitative information, because it is unlikely that the people being questioned have ever undertaken long interview sessions. Also, since the sample size is small, no concrete conclusions can be drawn if only one methodology is used. With these points in mind, and to encourage more input through working in groups and to stimulate thought and discussion, a mixture of semi-structured questionnaires and participatory activities were used. The methodology proved, through the use of a qualitative, triangulated approach, to be very successful in meeting the aims of the research. Figure 1 illustrates the research process undertaken for this study.

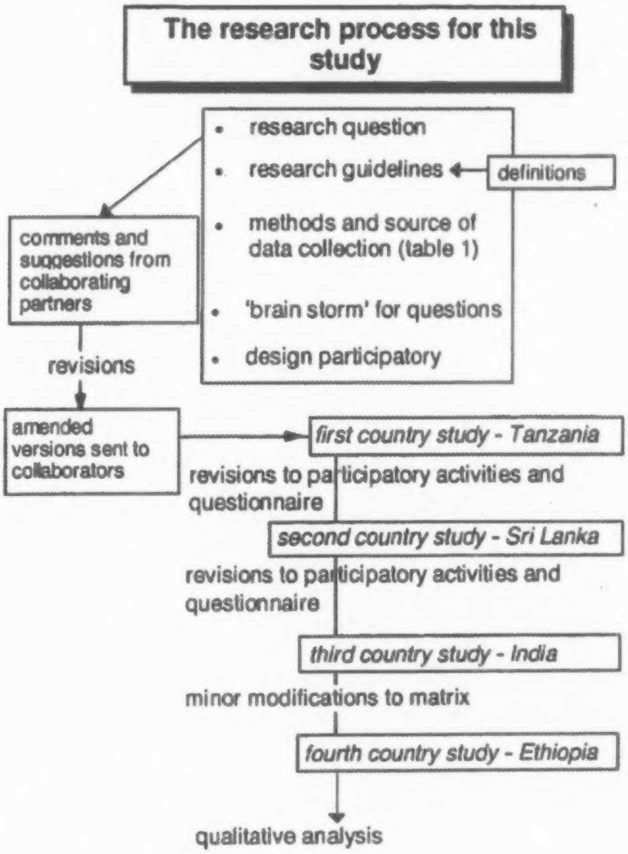
### 2.2 Country selection

The selection of countries for the study was made on the basis of published papers that included, either directly or indirectly, some reference to contextualising teaching and learning in rural primary schools. In some cases (Tanzania and India) direct contact was made with the authors of the papers, who then became the collaborating partners. In the other countries (Ethiopia and Sri Lanka), following contact with the authors, recommendations were made to find appropriate collaborators.

### 2.3 Sample Size

The sample size is small due to the nature of the research work. The work is innovative and few qualitative studies have been carried out in this area of educational research. The case studies are not meant to be representative or comparative of the particular country's situation. They are intended to be illuminative, illustrating in a unique study what actually happens in the classroom of a selected rural primary school. This can help deepen understanding of the constraints under which teachers work, the nature of their practice and its strengths and weaknesses, and the perceptions of pupils, parents and policy makers of teaching and learning processes in rural primary schools.

**Figure 1** The research process


The research process for this study
research question
research guidelines
definitions
methods and source of data collection (table 1)
'brain storm' for questions
design participatory
comments and suggestions from collaborating partners
revisions
amended versions sent to collaborators
first country study - Tanzania
revisions to participatory activities and questionnaire
second country study - Sri Lanka
revisions to participatory activities and questionnaire
third country study - India
minor modifications to matrix
fourth country study - Ethiopia
qualitative analysis

### *2.4 Case studies*

Eight case studies were carried out; these were located in two rural primary schools in each of four countries, Tanzania, Ethiopia, Sri Lanka and India. Field work of one week in each school (except Ethiopia) was undertaken to obtain an understanding of the particular school in relation to the key issues. Schools were selected by the collaborating partners following a set of guidelines, the most important being as follows:

- One case study school was recognised as an "innovative" school, where a school is perceived to be innovative if it conforms to some or all of the following:
    - there is a degree of flexibility in the curriculum, either in the basic construction or in the way the teacher interprets it and teaches it;
    - children are able and encouraged to discuss issues in class;
    - some attempt is made to use children's out of school experience in the learning process;
    - teachers use and/or develop resources based around children's out of school experience and knowledge;

  - there is some degree of continuous assessment;
  - parents and community members have some involvement with the school;
  - there is an attempt to use local technology in teaching and learning (resources relevant to local community and easily obtainable);
  - there is some degree of integration of subject matter across the curriculum;
  - some evidence of teacher support;
  - some element of decentralisation.
- The second school was in the same vicinity as the first, but did not necessarily need to have a reputation for innovation (an 'average' school).
- Brief overviews of two more rural primary schools were undertaken through one day visits, in order to provide more supporting data for the case studies.

### *2.4.1 The Interviews*

Semi-structured interviews were carried out and, for this purpose, separate questionnaires were designed for each of the target groups. For teacher interviews it was not always possible to have groups with even numbers of men and women, as this depended on the gender balance of teachers in the school. With pupil interviews even numbers of boys and girls were always requested. For interviews with community members, it was desirable to interview men and women, but this was not always possible. All interviews and activities aimed to get equal representation from men and women. Informant groups and size of samples are indicated in Table 1. It is important to reiterate here that the small sample sizes were chosen to provide a greater depth of information as required for an illuminative study such as this, rather than to yield broad, comparative data.

**Table 1** Interview groups

| | | |
|---|---|---|
| ***Key Informants*** | – | interviewed individually or in teams, which ever was appropriate. Persons interviewed included: ministry personnel, teacher trainers, researchers and curriculum developers. |
| ***Headteacher*** | – | interviewed individually |
| ***Teachers*** | – | interviewed in groups ( 2 groups of 4 teachers per school). [based on an assumption of 1 teacher per class and an 3 grade system, but this depended on the local education system in each country]. |
| ***Pupils*** | – | group interviews of 6 to 8 per group. The sample size (number of groups) depended on the school size and organisation. Ideally a sample was to be selected from a spectrum of year groups within the school (e.g. lower, middle and high grade classes) for in-depth observation and interviews. |
| ***Community members*** | – | group interviews of 4 - 6 persons per group, including parents and teacher-parent association members if possible. |

General background questions (e.g. name, position, qualifications) were kept to a bare minimum but in some questionnaires (headteacher and teachers) it was necessary to obtain data such as school numbers, teacher training, length of service, attendance rates, etc., in order to get some important background information on the school. As questionnaires were structured with the research question in mind, questions were very specific and direct in the objectives they were tying to achieve. In some cases it was necessary to ask a number of indirect questions in order make a particular question understood, the reason for this being that if some questions were asked outright it was likely that they would not be understood. For example, to explain the concept and process of contextualisation proved to be very difficult in all of the countries and a problem that had been envisaged prior to starting the field work. It was very important to use this indirect approach to asking questions with pupils, for example *'can you describe a time when your teacher asked you about your experiences outside school?'* and *'can you tell me about a time that you used something you learned at home when you were at school?'* were asked rather than direct, technical and complicated questions.

### *2.4.2 Pairwise Matrix Ranking*

Matrix ranking was used to obtain some information on the teaching and learning practices in the school. The method was first tested in Tanzania and proved to give some valuable information to support what was said in interviews. As the fieldwork progressed, the methodology for this activity changed slightly (mainly in the methods of learning identified by the schools) and became more refined to a point were it was a valuable tool in the whole methodology.

**Photo 1** Matrix ranking activity (teachers), Sri Lanka

The process involved ranking ten methods of learning against each other by preference, and was undertaken by pupils and teachers. Pupils and teachers were asked which methods of teaching were used in the school and depending on their responses new methods were added or old ones deleted to produce a matrix ranking specific to the school (in practice there was little variation in the matrix headings between schools or countries). A matrix ranking table is illustrated in Photo 1 and Photo 2. The method for completing the matrix was explained by the in-country researcher, and it was important to stress that the activity was not a test or assessment. It was also important that the pupils or teachers were not advised in their decisions in any way by the researcher .

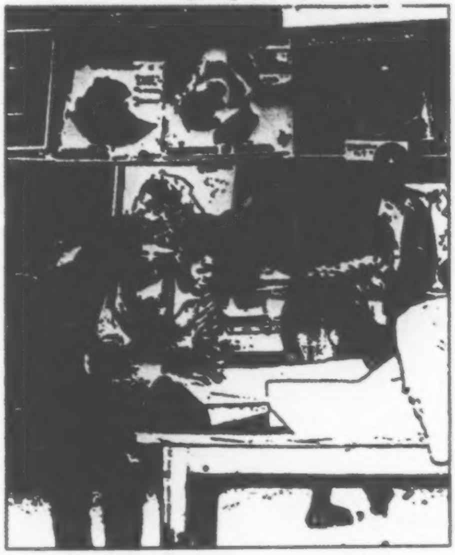
**Photo 2** Matrix ranking activity (pupils), India

### 2.4.3 *Mapping Activity*

Pupils also completed mapping diagrams (Photo 3 & Photo 4), a drawing activity that was designed to illustrate 'what pupils did at home', 'what pupils did at school' and whether there were any learning connections between the two environments. The activity was used as an 'ice breaker', emphasising that it was not a test and also was for their enjoyment. Pupils were asked to write their name, age, parents occupation and school year on the back of their diagram, which prevented the need to ask pupils background questions during the group interviews. The mapping diagrams were then used as a starting point for interviews with pupils. Pupils (in a group) were asked to describe their drawings, and questions from pupil's questionnaire schedule were asked where appropriate. This also allowed more time to look at the diagrams and try to understand what the pupils had drawn/written. A mapping diagram by a pupil in Sri Lanka is illustrated in Figure 2 and in each country's section.

**Photo 3** Pupils mapping activity, Sri Lanka

**Photo 4** Pupils mapping activity, Ethiopia



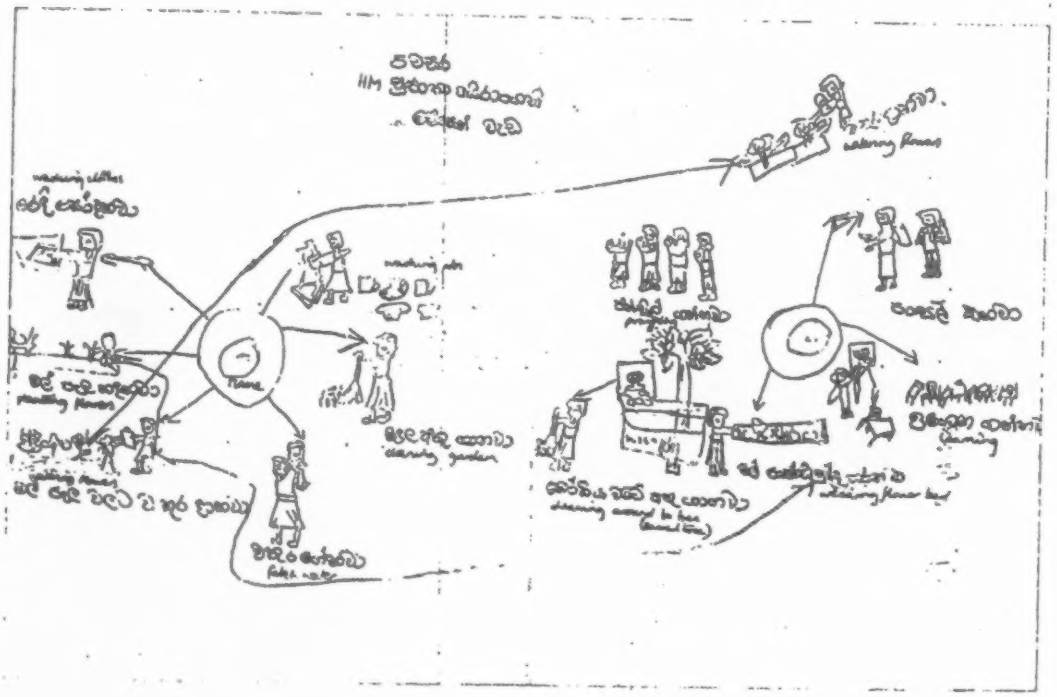
### 2.4.4 *Additional Comments on the Field Research*

In-formal observations formed an important part of this research. Throughout the fieldwork observations were made daily on what was happening in the school and in the classroom. During the participatory activities with teachers and pupils, their comments and reactions to the activities were observed. As more time was spent in each school, it was noticeable that teachers and pupils, and also local community members, became more familiar with the researchers, and vice versa. Once there was a clear understanding that the research visit was not some form of official inspection, an atmosphere of trust began to emerge, and in many of the schools the interaction between the researchers and the school community became noticeably less forced. Some teachers began to talk with the researchers informally between lessons and pupils came to show pieces of work which they had completed. Many comments and opinions were elicited as a result which helped greatly to inform the researchers' understanding of the processes taking place in the schools. The open nature of this interaction may also have reduced to some extent the likelihood of the respondents telling the researchers what they thought they wanted to hear. Clearly this could not be avoided entirely, but the daily interaction and increasing familiarity between the researchers and school and local communities may have helped to reduce its occurrence.

In all of the countries visited it was necessary to work in the local language in addition to using English. Collaborating researchers generally acted as translators, as well as being partners in the research process, and their understanding and translations of the questionnaires and activities were vital to the success of the research. In the case studies which follow, italicised text within quotation marks is used to present direct comments and statements made by interviewees in English, or, in some cases, translations from the original statements. In the process of translation some meaning is always lost, but the researchers feel that the inclusion of even a translation allows a better understanding of what the respondent conveyed at the time than to rephrase it in the researchers' own words.

All direct statements and responses presented in the case studies were obtained during verbal interviews with key informants, headteachers, teachers, community members and pupils unless indicated otherwise. The inclusion of such a statement or comment does not mean that the researchers support or agree with what was said, but its content indicates the view of the respondent at that time. Within the case studies, comments have sometimes been added by the authors in order to provide some insight into the situation by giving an explanation of why interviewees responded in the way they did. It is important to note that these are the researchers' own understandings and explanations and, unless otherwise stated, not to be treated as the views or perceptions of the respondents.

Figure 2 Example of a pupil's mapping diagram, Sri Lanka



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# TANZANIA

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# 1 Education in Tanzania

## *1.1 The Strategy for Education after Independence*

Tanzania became independent from Great Britain in 1961 and, under the leadership of Julius Nyerere, became the location for some of the most daring and radical social reforms seen on the African continent, based on the twin principles of socialism and self-reliance. The history of these various reforms which have taken place in the intervening 35 years is both complex and fascinating, and is well documented by a number of authors (Yeager, 1989, Bevan et al, 1993, Katunzi, 1993, Buchert, 1994, Yisa, 1995, Kent and Mushi, 1995). Today, Tanzania is listed as one of the world's 25 least developed countries with a per capita GNP of US$120 and per capita GDP of US$570 (Yisa, 1995).

Education in particular has been seen as a vital element of Tanzania's drive towards national development since 1967 when President Nyerere articulated the policy of "Education for Self-Reliance" (ESR), following the "Arusha Declaration". Mass political education was seen as a means of building the *"Tanzanian Personality"* (Kuhanga, 1977) which would inculcate socialist values. Four main strategies were adopted; resettlement of people in "Ujamaa" villages, adult education, compulsory universal primary education and higher education geared towards national manpower requirements. It was anticipated that this would concentrate on the development of human resources rather than wealth for a few, and lead to involvement of Tanzanians in their own development. Socialist education was seen (Kuhanga, 1977) as:

> *"the tool that can liberate the 'domesticated' colonised people from slavish mentality into the freedom of respectable human beings. It is the tool that can initiate, generate and establish social values which govern the security of the life and property of individuals as well as the public. It is the tool which gives man the techniques to transform and control nature to serve him economically and aesthetically".*

The overall intention of mass education was *"consciousness-raising"*, where people *would "feel free to make strategic decisions concerning their personal life and well-being and to carry them into effect"*, and live in *"human dignity and quality"* (Buchert, 1994:94). Most importantly, education should be relevant to the particular circumstances of post-independence Tanzania, a *"poor, undeveloped and agricultural economy"* (Nyerere, 1976).

A succession of Five Year Development Plans between 1964 and 1980 featured a huge expansion of the provision of primary education with major school building programmes and a significant increase in enrolment figures. These plans were followed by the National Economic Survival Plan (1981), the Economic Recovery Programme (1986) and the Economic and Social Action Programme (1988). Although major economic reforms were introduced, and a programme of economic and structural liberalisation embarked upon, the national aims for education changed little, emphasising primary education to be a cycle of learning, rather than a selection mechanism for advancement to secondary education. Maki (1993) observes however that, from the 1980s onwards, far less mention was made of educational planning compared with the previous 20 years, with the focus being more on fiscal policy at a macro-level. To date, the education sector is allocated an annual budget which has been dwindling with each successive year. For example, whereas the central government recurrent budget allocation to the Ministry of Education and Culture in 1980/81 was 11.7%, it has fallen to 3.3% in both 1993/94 and 1994/95 (Ministry of Education and Culture, 1996:41).

In order to translate the national aims into action, attempts were made in the 1970's and early 1980's to localise the primary school curriculum, emphasising the integration of theory and productive work. It was intended that this approach to learning, drawing on contributions from parents, agricultural workers and artisans, would enable rural children and young people to develop knowledge, skills and attitudes which reinforced the work ethic and would lead, ultimately, to community development. As Kent and Mushi (1995) state:

> *"The policy of ESR could therefore be perceived as a political yet pragmatic response to defuse the emerging conflict between the ideology of the state anxious to stem urban migration and the*

> *expectations and aspirations of Tanzanian families who perceived that educational progression was the vehicle through which their children gained passage from rural, low paid agricultural employment to urban, relatively well paid employment in a parastatal organisation".*

The primary school curriculum was developed to include a combination of practical and theoretical subjects through an integrated programme of study and work. Particular emphasis was laid on agricultural science, since it was anticipated that this would equip young people with the skills necessary to make the most of the potential of life in rural areas. Control of primary schooling was partially decentralised to the regions in order to involve all community members, including those at village level, in the planning and implementation of education. Although community participation was stressed as an intrinsic aspect of the educational process in the community school movement, participation of the consumers in planning and implementation of schooling was negligible. This, ironically, may be due in part to the original concept of "Tanzanianisation" which encouraged the concept of a homogeneous populace with similar goals, aspirations and even culture, incompatible, perhaps, with the reality of a nation of enormous environmental and cultural diversity. In addition, school pupils who were supposed to play a key role in the development of rural communities were barred from active participation since, according to the constitution, school pupils are not members of the village (Katunzi, 1993).

The community schools movement was severely damaged by the fact that it was being developed in parallel with the traditional, post-Independence primary school system which had a different curriculum. National examinations were based on this latter curriculum, and did not take into account many of the practical activities undertaken by community school pupils. Parents, community members and politicians complained against the community based curriculum as year after year, very few of their children were selected to pursue secondary education. Nor were there secondary schools operating in a similar fashion to allow for follow-up of the community school curriculum. Thus the system was unable to achieve its goals.

## *1.2 The Current Primary School System in Tanzania*

### *1.2.1 Aims*

In keeping with the ideals of Nyerere, policy for primary education stressed that *it "must be a preparation for the life which the majority of children will lead"* (Kent and Mushi (1995:8).This is still reflected in the aims and objectives of primary education, which, according to the Ministry of Education and Culture (1995:5), are as follows:

- to enable every child to understand and appreciate his or her human person, to acquire, value, respect and enrich our common cultural background and moral values, social customs and traditions as well as national unity, identity, ethic and pride;
- to provide opportunity and enable every child to acquire, appreciate and effectively use Kiswahili and to respect the language as a symbol of national unity, identity and pride;
- to enable every child to understand the fundamentals of the National Constitution as well as the enshrined human and civic rights, obligations and responsibilities of every citizen;
- to enable every child to acquire basic learning tools of literacy, communication, numeracy and problem solving as well as basic learning content of integrated relevant knowledge, skills and attitudes needed for survival and development to full capacity;
- to provide the child with the foundations of self-initiative, self-advancement and self-confidence;
  to prepare the child for second-level education (i.e. secondary, vocational, technical and continuing education); and
- to prepare the child to enter the world of work.

### *1.2.2 Structure*

Currently, the education structure in Tanzania is 2:7:4:2:3+, (that is, 2 years of pre-primary education, 7 years of primary education, 4 years of secondary Ordinary Level, 2 years of secondary Advanced Level and a minimum of 3 years of university of education. Pre-primary education, is however, offered to very few children as it was formalized only recently. It is intended that, ultimately, each primary school will have a preprimary school attached to it. Primary education is not free; the fee rose during the field research period from 200 shillings (about 30p) to 1000 shillings (about £1.20) per year, a matter of concern for many poor parents.

### 1.2.3 Curriculum

Tanzania Institute of Education (TIE) is now responsible for pre-primary, primary, secondary school and teacher education curriculum design, development, dissemination, monitoring and evaluation. The development of the curriculum is centralized, therefore, and is universal for the whole of Tanzania. The natural diversity in a large, heterogenous country with more than 120 different tribal groups has led to alienation of many people from a centralised process of curriculum development and hence the education system (Malekela, 1993). By 1992, there were 13 subjects taught at the primary school level: Kiswahili, Mathematics, English, Sports and Games, Art and Craft, Music, Science, Health Science and Home Economics, Political Education/Civics, Geography, Agriculture, Religion and History. Following complaints by teachers and the public that the curriculum was too overcrowded, the government in 1992 revised it leading to the reduction of compulsory subjects from 13 to 7: Kiswahili, English, Mathematics, Social Studies, Science, Life Skills and Religious Instruction. In addition, the curriculum is expected to balance the requirements of the majority of children who do not proceed to secondary education, with the requirements of those few who proceed to secondary education. By August 1996, however, very few primary schools had started to use the new curriculum as the syllabi, textbooks and teachers' guides had not reached the schools.

Standard VII pupils must take the Primary School Leaving Examination (PSLE), and their performance in the PSLE determines their chance of progressing to secondary school level. Testing is also carried out at Standard IV for diagnostic purposes. The number of candidates in the PSLE who score 50% and above (which is a passing grade) is very small. For example, in 1986, only 17% of the Standard VII candidates passed. Data from Morogoro region for 1992 and 1993 showed that only 10% and 8% of the candidates passed the examination in the respective periods. Failure rates are highest in Mathematics, English and Science subjects, in rural areas and among girls.

### 1.2.4 Teaching Staff

Numbers of primary school teachers had increased by 340% between 1974 and 1992, from 29,000 to 98,000, although many of these were Standard VII leavers with between 8 and 24 months of teacher training (Kent and Mushi, 1996). Currently, there are two categories of teachers at the primary school level; Grade A, those who have completed Secondary Ordinary level education plus two years of teacher education, and Grade B who have Standard VII education plus two years of teacher education. By 1995, there were 105,280 teachers teaching in 10,927 schools of whom 63,845 (60.6%) were Grade B (Ministry of Education and Culture, 1996:30). Most Grade B teachers have neither a satisfactory knowledge base in academic subjects nor an adequate professional training. Although the commitment to teaching of Grade B teachers, especially in the rural areas, has been commendable, there exists the necessity to raise their level of education. The recruitment of Standard VII leavers for Grade B teacher training ceased in 1993. According to the new education and training policy, the minimum qualification for a primary school teacher shall be possession of a valid Grade A Teacher Education Certificate whose entry qualification to teachers colleges shall be a minimum of Division III of the Certificate of Secondary Education Examination followed by a two year professional training at a teachers' college. This is intended to raise teachers' quality and professional competence for the efficiency of primary education. The current 63,845 Grade B teachers have, therefore, to upgrade themselves to Grade A through correspondence education and take the O-level examinations as private candidates. Upon succeeding in meeting the minimum admission requirements for Grade A teacher training colleges, they will undergo a one year training course.

## 1.3 Effectiveness of Primary Schooling in Tanzania

### 1.3.1 Resources

Although education and development were seen as intrinsically linked from the first days of Tanzania's independence, primary education continues to be severely under-resourced. According to official statistics of the Ministry of Education and Culture (1994), in 1993 there were insufficient numbers of permanent buildings and furniture in primary schools to meet the requirements of the potential primary school population, and most of the existing buildings were in a state of disrepair. Teaching-learning materials were in short supply, and three-fifths of the teaching force had qualifications below that recommended by government. Class sizes ranged from 50 to 150 with an average of 80 pupils.

### 1.3.2 Enrolment, attendance and progression

Initial success in educational improvement was gained by increasing enrolment figures. At independence, primary school enrolment was 25%; by 1981, 98% of 7-13 year olds were enrolled in Standard I.

Particular success was achieved with enrolment of girls, which had become equal to that of boys by 1985. By 1995 a total of 3,877,643 children (1,961,879, [50.6%] male and 1,915,764 [49.4%] female) were enrolled between Standard I and VII (Ministry of Education and Culture, 1996). Gross and Net enrolment ratios were 77.6 and 55.4 respectively (Ministry of Education and Culture, 1996). Although enrolment and attendance in primary education has long been compulsory for all children aged 7-13 years, in practice this is not enforced. The drop-out rate between Standard I-VII is 20-25% (Malekela, 1995) and rural areas seem to suffer proportionately lower enrolment and higher dropout rates in comparison with urban areas.

Figures for the progression of primary school leavers to secondary education is shown in Table 1.

These statistics reveal that, currently, only 14.3% of Standard VII leavers enter secondary school, 7.3% enter government schools, whilst the remainder enter private secondary school. The centralised examination system has always been seen as a means of selecting primary school pupils for entrance to secondary school and on to higher levels of the education system, regardless of the fact that this was in direct opposition to the goals of ESR. A recent survey (Kent and Mushi, 1995) revealed that 85% of males and 90% of females of the sample at primary school wanted to proceed to secondary school, although a significantly smaller percentage of both actually expected that this would occur in reality. In the past, possession of a certificate has provided the route towards further education or wage-earning employment, and success in examinations has been regarded highly by parents, pupils and teachers alike. The number of parents who are now prepared to pay for private education for their children highlights the increasing demand for secondary schooling. Many communities, both urban and rural, are also building their own secondary schools. This scheme receives some financial support from government, but still requires considerable funding from community sources. Further emphasising the increasing burden of the cost of education on parents and communities, relatively better-off parents in urban areas, and increasing numbers of poor parents in rural areas, are sending their children to tuition classes where they pay tuition fees of not less than 1000 shillings per month to the tutors, who tend to be the most competent primary school teachers. Although statistics are not available, it is stated frequently by teachers and parents that the children who attend tuition classes are far more likely to proceed to secondary schools (Malekela, 1993).

**Table 1** Primary Education Leavers and Form I Selection, 1963-1995

| Year | Std.VIII/VII leavers | Form I Selection Public | Private | Total | % |
|---|---|---|---|---|---|
| 1963 | 17042 | 4972 | 0 | 4972 | 29.2 |
| 1968 | 58872 | 6989 | 2511 | 9500 | 16.1 |
| 1973 | 106203 | 8165 | 4964 | 13129 | 12.4 |
| 1978 | 185293 | 8720 | 8467 | 17187 | 9.3 |
| 1983 | 454604 | 9899 | 9606 | 19505 | 4.3 |
| 1988 | 347978 | 15675 | 20789 | 36464 | 10.5 |
| 1993 | 363404 | 21531 | 26965 | 48496 | 13.3 |
| 1994 | 370534 | 24321 | 28498 | 52819 | 14.4 |
| 1995 | 386564 | 28412 | * | * | * |

*Source: Ministry of Education and Culture, 1996*

*Data from private secondary schools had not been compiled by the time these statistics were produced.

### *1.3.3 Public perceptions of primary schooling*

High drop-out rates and low rates of progression to secondary school normally lead to dissatisfaction with an education system from a range of stakeholders, and this is indeed the case in Tanzania. A recent study on parents' attitudes towards education (TADREG, 1993) reveals that parents feel they are not getting value for money from primary schooling, that many children are leaving school illiterate and innumerate, that "self-reliance" activities are mostly exploitative, that resources are being misused, that relations between school and community are poor, and that teachers abuse their authority over their pupils out of sheer frustration. The report cites the *"inefficient hierarchy which runs primary* *education"* as the main culprit. Bureaucratic inertia and mis-appropriation and embezzlement of funds has exacerbated the situation, with problems in distribution of supplies in addition to national shortages, and complex regulations surrounding the development of curricula and text books and materials (Kent and Mushi, 1995). The examination system is blamed also, since only academic aspects of the curriculum have been examined to date; the more practical and developmental sections have been accorded lower prestige, leading to abandonment of teaching of these elements or poor attendance by pupils. Parents see little advantage in contributions from community members to school teaching, or to their children being involved in manual and agricultural activities, when these seem to have no influence on their chance to progress to secondary school or to find employment.

Pupils seem also to be disillusioned with the teaching and learning process and drop out either to look for more pragmatic activities or to take up actual work opportunities in the newly expanding informal sector. This increases the likelihood of rural young people leaving home with little or no formal schooling and moving to urban areas to join the rising numbers of the unemployed. Also, many of those pupils who do complete primary schooling are thought to be undereducated, lacking knowledge and skills which are directly useful to life in the rural community. Much of what is learned at school through predominantly rote learning practices seems not to be transferable, disadvantaging school leavers from undertaking other occupations in the formal or informal sector.

Teachers are not happy with the situation either. Sections of the Tanzanian press champion regularly the teachers' cause, noting the need for a general improvement in school infrastructure, provision of in-service training to teachers and improved supplies of teaching-learning materials in schools. Salaries are a particularly emotive issue as, under present conditions, teachers tend to look for projects outside school in order to supplement their incomes. These alternative income-generating activities are sometimes carried out during school hours, leading to increased teacher absences in many schools. Teacher absence is worsened by the need for all teachers to collect their monthly salaries personally from the District Education Office. Distances to travel for those in rural areas, delays in payment and problems with the banking system mean that many teachers miss several days from school each month in order simply to collect their wages.

Clearly, from this overview of the national situation, the education system in Tanzania is in need of support, improvement and development. Although, as seen above, much literature may be found relating to the education system in general, little information appears to exist on actual practice in school. The following case studies were carried out in order to learn from the reality of the classroom about the nature of teaching and learning in two Tanzanian rural schools, paying particular attention to the way in which learning is contextualised through the medium of agriculture.

# 2 The Schools

## 2.1 Selecting the Schools

Two schools were selected for detailed case studies following discussions with the District Education Officer (DEO) of the District in which the research was carried out. In addition to the characteristics of an innovative school which had been offered by the researchers, the DEO suggested several more. These included:

- a hard-working, disciplined environment;
- a source of leadership in the community, for example by discouraging local conflicts through harmonious relations between staff and between school and community;
- the capacity to look forward for future development;
- cleanliness;
- possessing gardens with practical activities going on, especially if these activities reflect what happens in local homes, such as vegetable growing;
- use of teaching aids;
- time and opportunity for pupils to make things and to talk about their experiences.

Following discussions, one school was selected as "innovative", and a second was chosen as an "average" school. It was clear from an early stage, however, that it was perhaps easier to select an "innovative" school than an "average" school, due to the huge differences between schools in the District. Two other schools were visited also to provide further general information on primary schooling in the locale.

## 2.2 Location of the Schools - Arumeru District

### 2.2.1 Background

The research study was carried out in Arumeru district, one of the nine districts which form Arusha region, Tanzania. The district lies between 3.5 and 3.7 degrees South of the Equator on the slopes of Mount Meru, the second highest mountain in the country with a height of 14,000 feet above sea level. Arumeru lies between 2,600 and 6,000 feet above sea level with an annual rainfall of between 600 mm and 1200 mm. Temperatures range between 20 and 28 degrees Centigrade. There are three major climatic zones in the district, the Upper Belt, the Middle Belt and the Lower Belt. These zones vary in altitude, rainfall and predominant types of agriculture, with coffee and cash crops being grown mainly on the higher ground, and increasing numbers of livestock kept on land at lower altitudes. The Lower Belt is characterised also by irrigated crop production.

Arumeru district has an area of 2,966 sq.km., which is 3.6% of the whole Arusha region with an area of 82,424 sq.km. Administratively the district is divided into 6 divisions, 37 wards and 133 villages. It is composed of two major ethnic groups, the Maasai/Waarusha and the more sedentary Wameru. According to the census of 1988, Arumeru district had a population of 321, 898 people. The population annual growth rate was estimated to be 3.8% (slightly higher than the regional average of 3.5%). Based on projections, the district was estimated to have a population of 407,524 people by 1995 with an average population density of 137 people per sq.km. (being one of the highest population density in the country). The average population density, however, varies from the highly populated fertile highlands on the slopes of Mount Meru to that of the lowlands which have a scattered population. The district's current Crude Birth Rate is estimated to be 53 people per 1000 while the Crude Death Rate is estimated to be 15 people per 1000. Life expectancy is estimated to be between 60-65 years which is above the national average of 53.

### 2.2.2 Education in Arumeru District

#### Administration

At the district level, the Education Department is headed by the DEO who is assisted by two Supplies and Statistics Officers, one Adult Education Officer, two District Academic Officers, one Audio-Visual Aid Officer, one Home Economics Education Officer, and an Agricultural Education Officer. These education officers are assisted by other support staff, such as secretaries, drivers and storekeepers.

Academically and professionally the DEO reports to the Regional Education Officer and then to the Ministry of Education and Culture. Administratively, the DEO is responsible to the District Council and is the chief advisor to the Council on all educational matters. He reports to the District Administrative Secretary. The district councils are under the Prime Minister's Office which has a Ministry Regional Administration and Local governments under which all district councils fall.

#### Achievements registered in 1995

As a result of people's efforts in collaboration with their leaders, two day secondary schools were established. Application to register two more schools were sent to the Ministry of Education and Culture headquarters so that Form I could start in 1996. Furthermore, using the District Education Fund, the district council managed to buy, without central government assistance, iron sheets to roof classrooms in 29 primary schools and desks for 13 schools.

#### Problems in 1995

The Education Department was faced in 1995 with transport problems and difficulties in paying teachers' salaries. The Department had a lorry and a landrover, both of which were in bad condition and needed major repairs to serve a district of 148 schools with a total of 67,001 pupils. Distribution of school materials due to this transport problem was delayed severely. Teachers also faced the following problems:

- delayed entry in the central payroll;
- delayed adjustment of their salaries for more than a year;
- non-payment of leave and medical expenses; and
- being paid 5% instead of 10% of their entitled housing allowance.

Other problems cited by the District Education Officer included large numbers of pupils in classes, equipment shortages, absence of school lunches, no resource centres to help teachers raise standards of teaching and learning, constant changes in the curriculum with no accompanying inservice training and shortages of school buildings. Books, visual aids and basic teaching materials such as paper and pens were in such short supply that they were rarely seen in most schools. The sheer size of the Arumeru District was also a major concern; the DEO had only managed to visit half of the schools in the previous two years. Some schools were never visited unless a crisis arose. A lack of District Schools Inspectors worsened this situation. The narrow outlook of some Inspectors was also criticised since it was stated that teachers were sometimes reprimanded for not following the teachers' guides exactly, even when attempting to introduce alternative approaches to teaching and learning. A general lack of confidence amongst teachers was said to prevail, and no mechanism existed which could support and encourage teachers to experiment with alternative methods.

## 2.3 An 'innovative' school - School 'A'

### 2.3.1 The Community Environment

School A is situated in a village in the Arumeru district, about 10 Km east of Arusha. The village consists of about 600 households; as the average number of children per household is about 6, this means the population is in the region of 5,000.

#### Agriculture

Agriculture is the main economic activity in the village. The main cash crop is coffee, but maize, bananas and beans are important crops both for sale and consumption. Many households have small vegetable gardens which are usually tended by older children. The average area of land cultivated by a household is 2 acres, which, in the opinion of villagers questioned, is too small for a household to produce enough food for consumption and sale. Land is at a premium in the area, so land is cultivated intensively. Fortunately the soil in the area is a moderately fertile loam, and there is a surplus of ground water. This ensures a reliable main harvest each year from July to September but it is possible to achieve three harvests of maize per year. Mixed cropping is practised and both manure and artificial fertiliser are applied. A typical yield of maize would be 500-600 Kg per acre. Livestock are reared, mainly goats, chickens and pigs, and cows are kept for dairy production. Cows are zero grazed on banana and bean leaves and dried grasses due to land being utilised mainly for cropping.

### *Social and economic background*

The villagers have access to piped water and electricity, although few homes are connected to the power supply. The main tarred road from Arusha to Dar es Salaam runs alongside the village, but access to the village itself is by a narrow, uneven dirt road or by footpaths through the banana trees and coffee farms. Occupations range from purely farming to various types of business such as owning bars, shops and buses. A number of people have settled in the village from other areas in northern Tanzania, particularly from Kilimanjaro region. These settlers are mainly people of the Chagga tribe who are renowned for their business acumen, and tend to be among the better off, financially. The other two tribal groups represented are the Wameru and the Waarusha, the latter being related to the Maasai. Kiswahili is spoken by everyone and is the lingua franca. Some of the female primary school teachers work in the village but live in Arusha town where their husbands are employed.

There is a considerable difference in wealth between members of the village both in terms of income and expenditure. It is estimated that the average expenditure of a farmer's household would be about 3000 shillings per day but the daily income might be slightly more than this. Nothing is provided free by the government of Tanzania, and people must contribute to the cost of education, health, and all other services. Income is seasonal, with a steady flow in the harvesting period, and a very lean period from January to June in the growing season. Vegetable growing makes an important contribution at this time. Men and women are involved equally in farming activities now that traditional roles, where men ploughed and planted and women weeded and harvested, are breaking down. Everyone is expected to contribute to the work. Women are still responsible for cooking, collecting firewood and water and men do the "heavy work" which includes spraying and pruning. Men never cook, since, according to a male member of the school committee, *"a man who cooks has no respect - he is only a man because he is born a man, that's all"*. Women work for many more hours than men who do not participate in household chores. Children tend not to be too involved in farming activities if they are attending school, which, as mentioned earlier, is compulsory in Tanzania in theory. Children do assist with certain tasks such as harvesting coffee, cutting grass for livestock and weeding, at weekends or during school holidays They also contribute to household duties such as collecting water and firewood.

### *Relations between School and Community*

The head teacher explained that there is considerable interaction between the school and the community. Another teacher supported this by noting that the villagers were very interested in the education of their children, and had been proud especially because of the high entrance rate of pupils from the school in the government secondary school. Another reason given for community spirit was the relative diversity of tribes (around 5) compared with other villages. This was seen as encouraging harmony and co-operation. Community-school relations are facilitated by a Village School Committee, which is composed of 15 people, 3 of whom are teachers (including the head teacher who is its secretary). The function of this committee is to identify ways in which village members can contribute to the development of the school, and also to assist in certain issues such as discipline and absence of pupils. This committee also organises two meetings for all community members in a year, which many parents attend. Up to now the community has not invited school members to participate in community activities, however. Teachers do contribute to "Self-Reliance" activities in the community, for which they are given leave of absence. One teacher also said that he made financial contributions to community projects. The school occasionally invites certain community members into the school to assist with teaching in some subject areas. These guest speakers may include veterinary, health and extension staff.

### *2.3.2 The School Environment*

#### *Background*

School A was established in 1974 and comprises 540 pupils and 17 teachers. There are 264 male pupils and 276 females. 15 of the teachers are women; one of the two males is the head teacher. 8 of the teachers are registered as Grade A whilst the remainder are grades B and C. According to the head teacher there are sufficient teachers to teach the requirements of the school timetable. About 95% of the school children are from an agricultural background. Many live within 2 km of the school, but some pupils interviewed stated that they have to travel as much as 8 km from home to school. The catchment area is small because of the large number of primary schools in the area (148 in Arumeru District). On average, 40 out of the 540 pupils (7.4%) are absent at any one time. Absenteeism is due to sickness, pregnancy (this was relatively low, only one case in the previous academic year), or where children are called upon by their parents to work on the farm or go voluntarily to work in local mines (boys only). There are no repeaters in the school at present.

School A has a good academic reputation (one of the reasons it was identified by the DEO as being suitable for this research study). Between 1980 and 1995, 86 pupils had been selected to Form I in public schools. Of 66 Standard VII pupils in 1995, 20 obtained places in government secondary school and a few others obtained places in private secondary schools. This compares favourably with the national average percentage of primary leavers entering government secondary school of 7%. The District Academic Officer (DAO) noted, however, that this progression rate was influenced strongly by the opening of a new day secondary school in the locality. Like the primary school, this secondary school was constructed largely using local community contributions. In order to have 80 Form I entrants by the time of opening (July 31, 1996) a larger number than usual of Standard VII finalists were deemed to have performed sufficiently well to gain entrance. The DAO pointed out also that the number of day secondary schools in the District is mushrooming, increasing by around 5 each year. Since these schools lack qualified teachers and most resources, particularly for science and technology subjects, the quality of education gained is open to question. In the long term this may affect the quality of primary school teachers, since some of them will come through this under-resourced secondary education sector.

#### *School Surroundings and Infrastructure*

Infrastructurally the school is in a poor condition. There is no electricity supply, even though the posts carrying the wires run less than 5m from the school wall. Piped water is available nearby, but it is not clean, and teachers and pupils must travel about 1.5 km to the nearest drinkable supply. The school building is a long, narrow construction, the width of one classroom built of unrendered concrete block with a corrugated iron roof (Photo 1).

**Photo 1** School A

Doors and windows are open spaces, although a few windows do have shutters which can be closed. In the cold season, mornings can be very cool and parents worried that some pupils would suffer in the classrooms open to the elements, especially those who are too poor to own warm clothes. As one parent stated, *"in the cold season, children's handwriting gets very bad"*. It is a condition set by the government of Tanzania that a village community should build a primary school up to the level of the wall plates themselves; having done this, the district council then provides the roof. The village members also have constructed or provided all the furniture in the school, two teachers houses, latrines, and organised school security (a night watchman) to reduce theft of materials.

There are seven classrooms, each measuring about 10 metres square. Classroom furniture, made by village carpenters, is a collection of combined benches and desks, each of which is intended to accommodate two pupils. Since there are between 70 and 85 pupils per class (about the average class size in Tanzanian primary schools), pupils double up on desks, resulting in 4 children per desk from standard III upwards. Children in Standards I and II are allowed to remain at 3 per desk as it is thought that they need more space in their early years of schooling to increase their chance of intellectual development. Parents interviewed remarked that they would like to see class-sizes meet Tanzanian government regulations which recommends that a class should have 45 pupils.

In the centre of the school block are two small rooms, an office for the headteacher and a staffroom for lesson preparation and marking. This "staffroom" for 16 teachers measures approximately 3 metres square, and is a major source of discontent amongst staff (photo 2). The school stands in grounds of 5 acres which staff feel is insufficient for over 500 pupils to move around and to be used also for ESR activities, including agricultural production. Of the 2 teachers' houses, one is occupied by the headteacher, the other shared by 3 single female teachers. The headteacher has an impressive plot on school property in which he grows cabbages and tomatoes to supplement his income. The school "garden" is rather less impressive, however, and looks distinctly neglected compared with the *shambas* farmed by community members across the fence.

**Photo 2** The staffroom (school A)

A problem identified by most respondents was the shortage of materials and resources at the school. Parents are expected to provide all stationery for their children, but, as stated in the national policy on education, the government should provide textbooks and specific resources for teaching and learning. This, according to the head teacher, was not happening. He noted that specific books are recommended to be used in conjunction with the syllabus, and without these it is almost impossible for most teachers to teach the required elements. Many of these books are not available in the school, neither the teacher's guide nor pupil's textbooks. Pupils complained also of the lack of books, especially in English and Science.

**Photo 3** an agriculture lesson

In a Standard VII Agriculture lesson observed, there were six atlases for 85 children, and one set of digging tools. Science lessons which require specialised equipment such as chemicals, microscopes and bunsen burners are entirely theory based. Teachers do make some teaching aids from locally available materials; some examples observed were latrine covers, stools, puppets and dress patterns made from food sacks. At least there appears to be no shortage of chalk, which has been a problem in some Tanzanian primary schools. Manila paper is in short supply. Posters on various topics (mainly health and conservation issues), available for use by teachers, were on the wall of the headteacher's office but not in the classrooms. During the Agriculture lesson (Photo 3), the teacher demonstrated briefly a knapsack sprayer, but in a rather cursory fashion, and none of the pupils participated actively. Again, during a practical session on planting coffee, only three boys were engaged actively in the practical activity due to a lack of equipment; the rest of the class stood around watching.

Parents were concerned that a schools broadcasting service on the Tanzanian national radio had been discontinued, since this had been a means of supplementing teaching in school. They also wished that reference materials could be made available for their children's use, again as a means of supplementing what was learned in class.

### *2.3.3 The Teachers*

The teaching staff have all been through a teacher-training programme, and by the standards of some Tanzanian primary schools are a well qualified cohort. Some have been teaching at the school for more than four years. There is no in-service training available, normally. The head teacher, who had been at the school for 4 years, bemoaned the fact that he had qualified as a teacher in 1983 and had received no training since then. One long-serving teacher (17 years) had gone on a 3 month training course which "updated" him in Environmental Science, Maths, Science and English in 1994. He said that he found this most useful and wished he could receive more training, especially in English and Maths. In his words, *"You rest, you rust"*.

The head teacher stated that he and his staff were not happy about teaching in general, mainly because he felt that they are underpaid, a statement agreed with by all the teachers interviewed. Teachers felt that they needed to earn at least twice their current salary to have a reasonable living wage. The head teacher felt a four-fold increase was more appropriate. One parent, who had himself retired from primary teaching after many years service, noted that teachers used to receive an adequate salary, and would even pay the school fees of poor pupils whose parents could not afford to send them to school. Another problem identified by the village school committee chairman and the DAO was that teachers were often not paid on time, and had to go several days on the run to the local district education office to ask for their salary, during school hours. Even when they eventually received their cheque, there was no guarantee that the bank would have funds to cash it. In one group of teachers interviewed, three out of four said that teaching was not their first choice of career, but they had taken it up after failing to enter into other professional training (accountancy, law). These same three teachers stated that their first reason for wanting to teach was *"to earn money"*. One longer serving teacher said that she wished to *"help in life"*. In order to supplement their income, the head teacher noted that most teachers resort to other earning activities, such as his own vegetable production enterprise. In addition, he and other teachers practice "tuition", extra teaching carried out in spare time, identical in nature to normal teaching, either during evenings or at weekends.

In response to a question about what makes a good teacher, a wide range of criteria were mentioned by the different groups and individuals interviewed. These were then listed and ranked by a group of pupils (4 boys and 4 girls) and by a group of teachers (1 male and 3 females) (Table 2).

Some specific issues were mentioned in relation to these criteria. The head teacher felt that teachers should have good passes in important subjects, particularly English, Mathematics and Science, as this would result in a better pass rate amongst pupils, and hence an increased number progressing to secondary school. He stated also that he would prefer to have more male teachers in the school for several reasons. Firstly he felt that female teachers taking maternity leave disturbed the equilibrium in the school. He claimed also that female teachers had to do a lot of domestic work at home which took their attention away from school duties. Finally he mentioned that female teachers who were married to men with a higher status than teachers were sometimes rude to other teachers, himself included! With regard to pupil-teacher relationships, the head teacher stressed that beating was an important aspect of school life, as it *"helps students learn"*. Pupils when interviewed had identified beating as the element they disliked most about school. He went on to note that teachers need to develop a *"good correspondence with pupils"* and *"become friends"* with them.

Some of the qualities which appear as ranked highly by pupils are quite different to those given high positions by the teachers. For example, *"Gets many pupils into secondary school"* and *"strictness and discipline"* are ranked higher by the pupils, but are ranked much lower by teachers. When asked to state why they had ranked in this way, pupils said that they aspired to secondary education and hence wanted a teacher who could help them realise their dream. Teachers thought that a good education, love of teaching and commitment were more essential than the other criteria as in order to teach well, one had to be academically and professionally proficient.

**Table 2** Ranking of Qualities of a Good Teacher: Pupils and Teachers (School A.)

| *Pupils' response* | *Teachers' response* |
|---|---|
| 1. Gets many pupils into secondary school | 1. Good education |
| 2. Gives examples | 2. Love of teaching |
| 3. Love of teaching | 3. Commitment |
| 4. Encourages interest | 4. Follows syllabus |
| 5. Gives feedback | 5. Appearance |
| 6. Strictness and discipline | 6. Prepares for lessons |
| 7. Good education | 7. Can use and make teaching aids |
| 8. Willing to learn from others | 8. Attends classes |
| 9. Gender (Male) | 9. Gives examples |
| 10. Is active in the classroom | 10. Helps pupils understand |
| 11. Helps pupils understand | 11. Encourages interest |
| 12. Prepares for lessons | 12. Gives feedback |
| 13. Can use and make teaching aids | 13. Flexibility |
| 14. Good behaviour | 14. Is active in the classroom |
| 15. Follows syllabus | 15. Good behaviour |
| 16. Commitment | 16. Friendly to pupils |
| 17. Friendly to pupils | 17. Strictness and discipline |
| 18. Appearance | 18. Willing to learn from others |
| 19. Attends classes | 19. Gets many pupils into secondary school |
| 20. Flexibility | 20. Gender |

### 2.3.4 The Learners

As mentioned earlier, children and young people in rural areas of Tanzania are expected to assist their family members with household tasks, and sometimes with agricultural activities. A mapping exercise (Figure 1) was carried out to determine the range of non-school activities which school pupils are involved in (this method was developed considerably during the other country studies). When asked to identify, diagrammatically, their main activities, in terms of where they went on a regular basis, all four boys who carried out the exercise noted that they went to school, to the shop, to market, to the field, to collect firewood and to play. The four girls who took part also noted the first five, but instead of playing, all identified water collection as one of their main activities. It is interesting to note from this exercise that the pupils who drew the maps in this school did not draw any illustrations or pictures in their maps, even though they were told that they could present the maps in any way they wished. Classrooms were devoid of any pictures or posters, and the few books available were illustrated minimally. The shortage of paper, pens and pencils, also restricted opportunities for drawing.

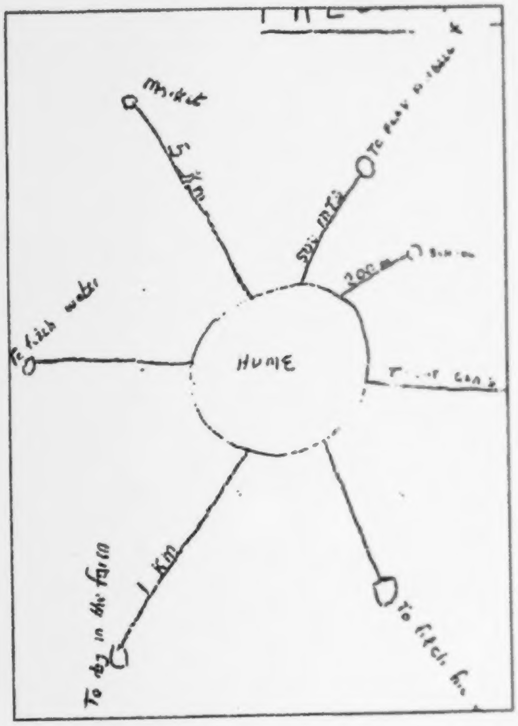

**Figure 1** Apupil's mapping diagram (School A)

A group of pupils (4 boys and 4 girls) were asked to identify the reasons why children go to school, and why some children do not go to school. They were then requested to rank these as a group exercise, and the resulting table was as follows (Table 3).

**Table 3** Why do some children go to school and others don't? (School A)

| *Why do children go to school?* | *Why do some children not go to school?* |
|---|---|
| 1. To get a good job | 1. Some go to work at mines (boys) |
| 2. To be able to read and write | 2. Inability to pay for school requirements (uniforms, books, pens) |
| 3. To be able to struggle in life | 3. Parents use children as source of labour |
| 4. In order to get more knowledge | 4. Some engage in petty business (boys) |
| 5. To be good at mathematics | 5. Inability to pay school fees |
| 6. To learn about agriculture | 6. Afraid of being beaten by teachers |
| 7. To be able to speak English | 7. Some are academically weak |
| 8. To do things less demanding than home activities | 8. Marriage |
| 9. To make friends | 9. |

From the reasons given for attending school, future prospects are clearly at the top of the list; it is ironic therefore that the reasons given for children not attending school are primarily economic.

### 2.3.5 *Teaching and Learning Processes*

#### *The curriculum and content of learning*

As mentioned earlier, the curriculum in use in all Tanzanian primary schools is prepared entirely by the Tanzania Institute of Education in Dar es Salaam, and it is not adapted or adjusted in any way at

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school level. There is some confusion over the curriculum at School A, since the government has introduced a 7 subject structure as opposed to 13, but some of the new subjects such as "Life Skills" are not yet being taught. The syllabus for certain subjects also appears not to have changed, even though there should be a difference between the old and the new syllabus. According to the District Academic Officer, the new curriculum was supposed to be fully implemented by the end of 1997, but he felt that *"everything could still change"*. One teacher noted that the constant changes in the curriculum content made teaching very difficult, especially as teachers were not consulted, informed late, and books and resource development failed to keep up with curriculum change.

All teachers interviewed expressed the view that the curriculum is too full, even after the reduction of subjects from 13 to 7. Time is clearly a problem, since all those interviewed felt that not enough time was available to cover all the content. The large class sizes were also cited as a reason for insufficient time to deal with individual students sufficiently.

One teacher stated that it is necessary for teachers to "second-guess" examination questions and limit their teaching to those subject areas identified as the ones most likely to come up in the PSLE papers. Not all 13 subjects in the old curriculum were examined, so that in terms of what is actually taught, little may have changed. The head teacher felt that much of the content of the new curriculum is irrelevant since it relies on materials and equipment unavailable in the local community, such as machines in the Science syllabus. Not only did the pupils have little or no experience of some aspects of the curriculum, it was not possible for the school to obtain many items described, making some teaching totally theoretical and abstract.

The school committee chairman suggested that more periods in Maths, Science and Language were required to give pupils a stronger foundation in these subject areas. Some teachers felt that more agricultural and vocational education would be valuable. Parents agreed with this, but emphasised the need to base practical agricultural activities on sound scientific methods. They noted that agriculture lessons appeared to have been limited to manual labour in the school garden. Domestic Science / Home Economics was mentioned by several teachers as a particularly useful subject for girls only, although it is studied by all pupils.

In interviews with pupils, English was identified as the most popular subject, because it would help when seeking a good job. The subject disliked most by boys was Domestic Science, since *"they are not women"*. Girls disliked Games most, as they said they did not like to get dirty. Boys thought also that Agriculture was a *"boys'"* subject, but they did not see any problem with girls studying it. The subject seen as easiest to cope with is Kiswahili, because it is a language they all speak daily, and one they knew even before coming to school. Maths is seen as the most difficult subject, particularly Geometry. Pupils stated that they thought education was very important overall.

### *What takes place in the classroom*

Teaching methods observed at the school involved traditional chalk and talk and demonstrations. Teachers interviewed did state that they used group methods in English, Science and Mathematics lessons but that they found this approach difficult. Reasons given for this included the large numbers in the class being unmanageable, and the difficulty in knowing whether individuals were *"learning"* when they worked in groups. It was claimed by the teachers that pupils preferred whole class teaching. It was observed that pupils automatically huddled into large groups when it came to using resource materials. The alacrity with which they did this suggested that this was indeed a common occurrence. In one observed class, the teacher visited each group to check on their progress. A Standard I teacher, stated that he used group work on a regular basis, dividing his class into 3 groups. He called the groups A, B and C, and encouraged all pupils to be promoted into group A as a motivational strategy. According to this teacher, lazy pupils were pulled up by the others, and pupils *"teach themselves"*. Other teachers noted that pupils frequently helped each other with their work. Standard VII pupils stated that they did work in groups occasionally and that they enjoyed it.

The head teacher emphasised the importance of using questioning techniques to draw responses from students and involve them in the lesson. This approach was observed in the classroom, although the questioning in an observed lesson was based on simple recall rather than problem-solving. The pupils did not ask questions themselves in this lesson, but both teachers and pupils interviewed stated that pupils did ask questions. The Standard I teacher noted that his pupils often *"give news about themselves"*, such as what their mother had eaten for breakfast. An interesting feature of the teacher-pupil interaction in the classroom was the spoken agreement by all pupils with statements made by the teacher. The teacher would make regularly a series of statements to each of which the entire class would respond *"Ndiyo!"* (yes) in unison. This exchange could develop a rhythm which seemed to draw a response automatically from the pupils, including from those who previously had been glancing out of the window or writing on their hands. Pupils did not take notes during one lesson observed, and the teacher rubbed all her notes off the blackboard before the class could write them down. Afterwards she wrote up a series of questions related to the subject which they were then expected to answer in their notebooks. This was supposed to encourage pupils to think about what they had heard and seen during the earlier part of the lesson rather than simply copying notes off the board. There were always some teachers observed in the staffroom during school hours marking piles of pupils' exercise books.

### *Teachers' views on Teaching and Learning.*

A group of six teachers (all female) were asked to rank methods of helping pupils to learn better. Ten possible activities were listed, which had emerged during the interviews. Teachers were asked to rank the activities in pairs according to the design of the matrix (Table 4).

**Table 4** Summary of Matrix Ranking of Ways of Helping Pupils Learn: Teachers at School A.

| Rank | Method of Learning |
|---|---|
| 1 | Pupils doing practical activities |
| 2 | Teacher giving examples |
| 3 | Pupils asking questions |
| 4 | Pupils singing or reciting |
| 5 | Teacher talking or reading to pupils |
| 6 | Teacher asking questions |
| 7 | Pupils talking about their own experiences |
| 8 | Pupils writing about their own experiences |
| 9 | Pupils helping each other |
| 10 | Teacher beating pupils |

"Pupils doing practical activities" and "teacher giving examples" were ranked highly by teachers as the best ways of helping children learn. Teachers said that learning by doing helps pupils remember for a long time, as does the provision of examples if there are many ("examples" included exercises and short assignments). The idea of pupils talking about or writing about their own experiences, which was thought to be relevant to learning since one would be moving from the known to the unknown, was not ranked particularly highly. Asked why this was so, most teachers said that things that happened in pupils' homes were private and some of them confidential. The other argument was that there were class differences among pupils and the types of homes they came from. To ensure that those coming from poor homes with limited resources did not feel an inferiority complex, such an approach was not very much favoured. The teacher beating the pupils as a way of helping them learn was not preferred at all, although it was observed that pupils were being beaten every day, an approach supported strongly by the head teacher. The teachers' ranking therefore might be interpreted as what they saw as an ideal situation, rather than what was practised on a daily basis.

Teachers at School A were of the opinion that teaching and learning could be improved if certain inputs were injected into the system. A group of teachers (four females) prioritised them as shown in Table 5.

Contrary to what might be expected, especially since it was a subject much talked about, higher salaries were not the top priority, and in fact were ranked in bottom place. Teachers ranked most highly the need for better training (both pre-service and in-service), participation in the curriculum development process, and provision of the basic teaching-learning materials which are deficient in schools. They went on to say that without these inputs, a teacher could not do his or her job anyway, and so an increased salary would be meaningless for teachers who had a genuine love of teaching. It should be noted, however, that all teachers interviewed were aware that the focus of the research was teaching and learning practices. The possibility that they prioritised the areas in which they thought they might receive some help from the team cannot be ignored.

**Table 5: Inputs needed to improve teaching and learning: Teachers at School A.**

| *Rank* | *Inputs* |
|---|---|
| 1. | Training for teachers (long courses) |
| 2. | Consultation in curriculum development |
| 3. | Teaching aids |
| 4. | Seminars and workshops |
| 5. | Stationery (paper, books, pens) |
| 6. | Textbooks |
| 7. | Support from District Education Office |
| 8. | Support from community |
| 9. | Smaller numbers in class |
| 10. | School inspections |
| 11. | More secondary school places |
| 12. | Resource centres |
| 13. | Buildings |
| 14. | Furniture |
| 15. | Higher salaries |

### *Learners' views about teaching and learning*

As this was the first case study carried out, and the research process was still being refined, a shortage of time resulted in pupils not being asked to undertake the matrix ranking exercise. In interviews, pupils did say, however, that they preferred teachers who gave examples, and who taught so that they understood. One pupil stated that she preferred teachers to use examples based on what she knew already. Members of one group of pupils interviewed stated that they had *"had enough of rural life"*, and wanted to leave the village because there was nothing new to learn there. One pupil said that she would like to learn about new people and places. Perhaps the proximity to the road, and hence access to Arusha, as well as interest in job possibilities has an influence on the broad view of education held by pupils in the school.

### *2.3.6 The Home Environment*

The parents interviewed stated that they viewed education as being very important for their children, perhaps not surprising as they were members of the village school committee; one parent described it as *"the key of life"*. They felt, however, that educational standards had fallen. Parents interviewed complained that they felt powerless about what went on in schools, even though they were expected to contribute financially to school construction and maintenance. They felt frustrated that they had no possibility to interact with those who decided what their children learned in school.

Various examples were given to illustrate the dissatisfaction with their children's education. One parent claimed that a Standard VIII (top-primary in a previous system) pupil was *"brighter"* than a Form VI (A level) pupil of today. Another example given was of a Standard I entrant who had the advantage of 2 years kindergarten in Dar es Salaam; it was thought that she was as *"bright"* as any of the Standard IV pupils in school A. In general, parents felt that children were less enthusiastic about education than they used to be.

The parents interviewed stated that they thought all teachers should continue to receive training in order to keep up to date with new developments and lack of in-service training was identified by parents as a limiting factor in their children's education. One parent stated that he would like to see teachers receive scholarships or some in-service training provided by the government, particularly in the "3 Rs", Science and English. In terms of relative importance, parents identified Mathematics, Geography, Domestic Science (for girls) and Agriculture as key subject areas. They also expressed the wish to see Business Studies/Commerce (to assist school leavers to set up small businesses) and health and disease prevention dealt with more strongly in the curriculum. Parents seem willing to support the school when it comes to disciplinary issues. One parent stated that parents whose children came home complaining of being beaten by a teacher would also mete out discipline to a child *"if they knew the value of education"*. Other parents, however, cited cases of boys who had been circumcised (and therefore had entered into adulthood) being beaten, and even worse, being beaten by female teachers. This went against traditional practice, and some parents had complained when it happened.

Interest of parents in their child's schooling depends on the general outlook of the parents on education. It was stated that some parents regularly checked their children's exercise books and asked them about progress at school, whereas others never bothered; it was *"not a skin off their nose if a child works or not"*. Those who did check test scores were sometimes confused because of the overall low standards of a class; an example was given of a child who came home with a test score of 45%. On being accused by the parent of not working hard, the child pointed out that he had come 4th in the class out of 85, the top mark being only 48%.

It is apparent that the relationship between parents, particularly fathers, and their children also affected the amount of direct parental interest in schooling. In response to the question regarding children asking their parents questions, it was explained that, traditionally, children would find it difficult to talk to their fathers, and would use the mother as a *"bridge to the father"*. Men would tend to talk to other men of their own age group and status. It was claimed that this could be disadvantageous in matters relating to schooling, since many women had not had the opportunity to attend school. Some parents felt that these traditional roles and relationships were changing, and would prefer to return to them to maintain the respect of children for their parents, and the *"distance"* between them. One parent noted that change was inevitable, however, and it was up to parents to deal with these new situations as they arose.

Some parents felt that their children needed more help with schooling than was offered by the school in normal hours. In addition to the normal primary school fee and the contribution from all villagers of 50 shillings per year for school upkeep, many children at school A receive "tuition". Tuition costs 1000 shillings per month; hence it is a considerable source of income for teachers (or *"motivation"* as described by the head-teacher) and a major expense for parents. Not all parents can afford to pay for tuition. In the current Standard VII class, made up of 85 pupils, 30 go for "tuition". How much of the school's academic success is due to tuition is not known, but most of the pupils who proceed to secondary school have had the advantage of tuition. Some parents expressed the view that a pupil's progress would be dependent on the wealth of his or her parents, and that educational goals would not be achieved if there was a different form of education for those who could afford it. One parent, a businessman, felt that it was up to parents to pay if they wanted their children to succeed. The local councillor suggested that all parents might make a *"top-up"* contribution to teachers' pay which would allow all pupils to receive "tuition".

With regard to the future of their children, parents expressed the view that they would prefer their children not to enter agriculture, since they wanted them *to "go beyond what they had achieved themselves"*. They wished that all their children would eventually live in a *"modern house"*, which clearly had implications for their future income and where they would live and work to achieve this goal. They saw that education could enable children to become self-reliant, and to get employment in the *"modern sector"*.

### 2.3.7 Contextualising Teaching and Learning

With regard to contextualising teaching and learning, teachers acknowledged that, according to Tanzanian government aims for education, they were supposed to relate the content of the curriculum to the local environment. They thought that the pre-service training they had received had been helpful, and did enable them to practice this by relating the content of the curriculum to locally relevant examples. Examples given were:

- discussing local crops and livestock in Geography;
- using objects brought in by children (fruits, seeds, household objects) to teach about prepositions in English;
- using round objects from home to teach about circles in Mathematics;
- asking young children how many cows they had at home in Mathematics;
- asking pupils how they cultivated their home vegetable gardens in Agriculture.

From observations and discussions with teachers, it became apparent that some teachers contextualise learning by using examples on the spur of the moment, without conscious planning, or

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without really understanding that this could be a strategy used more regularly. One teacher noted that basing teaching and learning on children's own experience was useful because teachers *"should learn from them"*, and *"have to know their interest"*. He acknowledged that this was difficult when pupils had different ranges of experience but explained that this could be overcome by using different types of examples, a practice welcomed by pupils as well.

Pupils stated that teachers never asked them directly about their home life, but did sometimes ask about things relating to the village. They thought that what they learned in school was different from what they learned at home because it was an organised programme of learning. They also pointed out that at home they learned agriculture, whereas at school they learned about reading and writing. They did not draw the link themselves between learning about agriculture at home and at school. School learning was thought to be more valuable as it could help them get good jobs. They noted that the qualities of obedience and respect for elders learned at home were useful in the school context. Pupils also laid great emphasis on examples given by teachers. They felt that this was an important part of the learning process, especially when the examples were based *"on things they knew already"*.

In the interviews with parents, a lot of interest was expressed regarding the development of teaching strategies which relate learning to the local context. In general the concept was welcomed, particularly by linking learning to the pupils' agricultural background. There was general agreement, though, that children should not be encouraged to discuss their family life in great detail in the school as this was seen as an invasion of privacy.

### *2.3.8 Using agriculture as a means of contextualising learning*

From the above examples given, it is clear that some teachers did attempt to relate the learning experience to the pupils' agricultural experience, for example in Geography and Mathematics. It was apparent, however, that teachers at School A had a limited capacity to find ways of doing this. This was illustrated, ironically in an agricultural lesson observed which dealt with coffee production. This presented an ideal opportunity to relate the content of the lesson to local conditions, since coffee is the main cash crop grown in the region. The teacher did not ask the children about their knowledge or experience of coffee production, even though children help regularly with the coffee harvest, and coffee trees grew in the school grounds. She did ask the class who had drunk coffee that morning; in fact no-one had, as, in response to a second question, it was apparent that all had drunk tea. She also showed the class small coffee plants, one of which was planted later, and passed around the class examples of coffee beans, fresh and roasted, ground coffee, and leaves with evidence of a rust disease.

Some teachers did use agricultural examples, either intentionally or unintentionally, to bridge the gap between school learning and the home environment. Since, as noted above, discussing the actual domestic scene obviously held a number of taboos, reference to work practices such as agricultural activities had two advantages, firstly being familiar to all school pupils and secondly being fairly uncontentious.

### *2.3.9 Issues arising from the School A Case Study*

The list of characteristics of an innovative school had been discussed with the DEO, but his choice of School A as an example was probably influenced also by the fact that the headteacher had provided strong leadership in the local community during a period of tribal conflict. Partly as a result of the headteacher's efforts and his good relations with local community members, particularly the village elders, order and harmony had been restored. The good relations between the head teacher and local community members was quite apparent during the visit. Since many schools in Arumeru District do not benefit from this harmonious atmosphere, the reason for the choice of this particular school became more clear. In fact, many of the characteristics of an innovative school are absent from School A, particularly resources such as teaching aids, pictures, books etc. The school is fortunate to have several very long serving teachers, who demonstrated verbally and practically their ability to provide stimulating learning experiences for their pupils. There are also a number of younger teachers, however, who seem to lack enthusiasm for their work, and in this regard a really strong sense of a school community seems absent. Even so, the demand from all teachers for greater support and further training is very strong.

A real advantage for School A is its location in a community which has several business-minded individuals as members. This small group of men have contributed considerably to school funds for buildings and equipment, and have encouraged other community members to give what they could, either financially or through time and labour. The school has also developed a "sister" relationship with a primary school in the UK, and some co-operation and communication is already taking place. In this sense, the relative security of the school means that innovations can be developed in a secure environment. The apparent lack of teacher-led innovation seems, therefore, to be caused by other factors, the absence of which mitigate against the use of alternative methods of teaching and learning. One such factor which might strain relations within the school is the preference of the head-teacher for male staff when apart from himself and one other male, all the teachers are female. Sub-groups of teachers appear to exist as well, which is not conducive to the creation of a collaborative culture within the school. There seems also to be a view pertaining amongst many of the school members interviewed that education is very much a means to an end, rather than an important process which can continue throughout life. For some of the teaching staff it provides an interim means of employment. For pupils it may result in a job, preferably after leading to a secondary school education.

The concept of contextualisation proved difficult to grasp for almost everyone interviewed at School A, teachers, pupils and parents alike. A certain amount of explanation and careful questioning, was required before understanding was reached about the focus of the research. Once the nature of contextualisation was grasped, a great deal of enthusiasm was generated, since everyone, without exception, stated that they felt it was an excellent practice to pursue. Some teachers were delighted to discover that they were actually using it to a limited extent, although there was no evidence at School A that learning was being contextualised in a conscious fashion, other than through the use of occasional examples, recognisable to pupils, to illustrate certain topics from the curriculum. It is true that some of these examples have an agricultural basis, but they seemed to be picked out at random. Their use seems also to depend on the enthusiasm of the teacher to move beyond the specific material included in the teachers' guide. All of the teachers interviewed stated that they would like to learn more about how to contextualise learning.

Even with the good relationship between school and community, the school and village environment are not used as a source of interest or reality which can provide a basis for an understanding of more abstract concepts. In this sense, the case study yields little information towards an understanding of how learning can be contextualised and the impact that this would have on pupil performance, attendance, and attitudinal development. It does, however, provoke a degree of questioning about what conditions will create fertile ground for the contextualisation of learning. It also provides an excellent illustration of the enormity of the problems facing rural primary schools in Tanzania.

## *2.4 An 'average' school - School B*

### *2.4.1 The Community Environment*

School B is situated in a village about 5 km to the south of the village where School A is located. The two villages are separated by a deep valley. School B's village has a population of 2,555 people of which 950 are adults, 1,460 children and 145 are handicapped people. The village also has safe piped water which has been rehabilitated by a USA-based donor agency so that more water is available to meet villagers' requirements

### *Agriculture*

Economically the vast majority of villagers depend on agriculture. The village lies partly on steeply sloping land, where coffee is grown as a cash crop. The other section of the village is on lower lying ground where farmers grow maize, beans, and bananas, mainly as food crops. Livestock are also kept (dairy cattle on hill slopes and beef cattle and goats on the lower and drier areas). On average, a household farms 2 acres of land and owns 2 dairy cows (on the slopes) or 3 beef cows (lower lying). A number of people are engaged in vegetable gardening, but some are employed in a large, commercial, rose growing industry located near to the village. The soil is fertile, and there is no shortage of water for agricultural purposes.

### *Social and economic background*

The villagers have access to piped water and electricity, but few homes are connected to the power supply. The village lies near a wide but rough dirt road, but access to the village itself is by a narrow track or footpath. Occupations range from purely farming to various types of business such as owning bars and shops. The main tribal group represented is the Warusha, but some Wameru and Chagga people live there also.

According to villagers, there is not a great difference in wealth between community members, since there are few business owners. Income is seasonal with lean and relatively affluent periods of the year. A number of farmers are also artisans, e.g. carpenters, cobblers, tailors, but they tend to carry out their trade during the periods of the year when people have cash to hand, during and after the harvest. The average size of a household is 8 people. A number of pupils who attend the primary school are noticeably poorly clothed, and ill-health and poor nutrition are constant problems. From their height and physical appearance, many of the pupils aged 15 or 16 appear to be four or five years younger than they actually are. One pupil had died in the previous year due to malaria, which could have been treated had there been medication available.

#### Relations between School and Community

The headteacher and teachers thought that it was important to have a good relationship between the school and community and they felt that, in general, the existing relationship was satisfactory. One problem identified by the headteacher, was that the village school committee wanted *to "overcome the school"*, and the chairman would sometimes arrive expecting to check on how things were going. This situation arose apparently because community members were not sure about the role they had with regard to a school which they had built themselves and continued to support financially. The headteacher had received a manual from the Institute of Manpower Training for Educational Personnel (MANTEP), entitled the "Educational Management Training Manual". This included a section on how a head-teacher should educate the village school committee on *"the difference between the school and the village"*. The village school committee apparently attracts sporadic support, and includes three women members as recommended by government guidelines. Unfortunately the women members rarely attend committee meetings, possibly because they find it difficult to interact with men according to traditional custom.

Some outside "experts" come into the school and contribute to teaching, for example, veterinary and health officers working in the local community. School teachers said that they did not have any particular additional role to play in community life.

### 2.4.2 School Environment

#### Background

School B opened in 1977 when universal primary education (UPE) was implemented for the first time, starting with one class. The classroom was constructed by the villagers and parents. Later the villagers built four more classrooms making a total of five. Due to their financial limitations, the parents decided to build the classrooms using poles and thatched with grass. Initially there were no desks at all and children were forced to sit either on the mud floors or on stones. In 1993 the villagers and parents in collaboration with World Vision International built four more classrooms to make a total of nine and one office for teachers. The Arumeru District Council assisted by providing iron sheets for roofing two classrooms (Photo 4.)

In August 1996, there were 682 pupils (344 boys and 338 girls) from Standard I to VII and 15 teachers (3 men and 12 women), one of whom is the head teacher. Six teachers are Grade A and the remaining 9 Grade B by qualification. There are 12 streams, all of mixed ability. Standards I-V are divided into 2 class groups each, whilst VI and VII are in single groups. Average class sizes are in the region of 80, although between 15 and 20 pupils are usually absent from a class at any one time. Standards I and II are taught in shifts, stream IA and IIA in the morning, and IB and IIB in the afternoon. Of the pupils attending the school, it is estimated that about 93% come from an agricultural background.

Since the school started to present its students for the Primary School Leaving Examination (PSLE) in 1984, only 21 had been selected to join Form I public secondary schools by 1995, making an average of less than 2 students per year in the 12 year period. The highest progression rate occurred in 1995 when 6 out of 79 candidates were selected, thanks to the establishment of a day secondary school nearby. This sudden increase has improved the academic reputation of the school locally.

#### School Surroundings and Infrastructure

Since 1993, the donor agency has rehabilitated the nine classrooms and the teachers' office and provided 50 desks and 10 tables for teachers' use. There are only two teachers' houses for five teachers (two families in one house separated by a wall, with two small bedrooms each) and the other one is shared by three unmarried women teachers. The first house was built by villagers and parents while the second one was built in collaboration between the villagers and the donor agency. There is very little land, since the plot on which the school is built was donated by a local farmer. Apart from the school buildings, there is a football pitch, but no school garden.

The absence of teaching aids is the source of greatest concern amongst teachers and pupils alike. Classroom walls are completely bare, even though there are lockable doors on all rooms. Some teachers have made their own materials, for example a map of Tanzania, and the parts of a maize plant, embroidered onto pieces of cloth. These materials are durable and cheap in terms of materials, but had obviously taken some considerable time and ingenuity to make. Teachers acknowledged that they could make other materials if paper, pens, magic markers and coloured chalk were available, but due to lack of money this was not possible. Some teachers do bring in materials locally available, or ask pupils to provide them. One teacher had obtained frogs for dissection in science, and rats had also been used to demonstrate the effect of an absence of oxygen.

### *2.4.3 The Teachers*

All teachers but one interviewed complained that they had had no in-service training or opportunities for professional development since leaving teacher training college. The headteacher was the only exception, as he had been on two short courses in his 17 years of teaching; these were in "leadership" and "educational management". Even so, he felt that all teachers required *"refreshers"* on a regular basis. He stated that he tried to read about new or difficult areas of subject matter and alternative methods of teaching, but found it difficult on his own with no support. One woman teacher said that she wished to attend courses in English as she was required to teach it; these courses are only available in Arusha town. On calculating the cost for her to undertake the course (including transport and fees), she estimated that this would leave her very little money from her monthly salary for food and clothing. Several teachers mentioned that they visited other teachers in local primary and secondary schools for advice on some subject matter when they had a problem. Areas identified in which training was urgently needed were English, Science and Mathematics. The reasoning behind this was that many teachers had studied very little of these subjects in their own education, and are now expected to teach them to pupils. Training in methods of teaching and making and using simple teaching aids was also thought to be important. One teacher mentioned that she would like the educational programmes broadcast on the radio to be reinstated. Another area identified for in-service training was in methods of assessment of pupils as this was limited, currently, to monthly tests. It was pointed out that teachers had no idea about how to assess anything other than the acquisition of knowledge.

**Photo 4** School B and pupils' mapping activity

The headteacher clearly was concerned that this school should be run as efficiently as possible, and was attempting to develop his knowledge of school management techniques. The atmosphere in the staffroom was welcoming and friendly, and relations between staff and the head teacher appeared good. The problem relating to salary payment was witnessed on one of the visits to the school, however, as only 5 out of the 15 teachers were present, the rest being at the District Education Office, trying to acquire their salary payment.

The suggestion that one teacher might go to collect all the salaries and bring them back was not seen as being realistic, unfortunately, as *"today, not all teachers are honest"*.

When asked to rank the qualities of a good teacher, the groups of pupils (four males and four females) and teachers (two males and two females) had similar priorities (Table 6). A good education was seen as the most important quality of a teacher by both pupils and teachers, since without this it was thought a teacher would not be able to handle the content of the syllabus. Commitment and *"love of teaching"* were seen also as of great importance. Otherwise, pupils rated highly those qualities in teachers which were related directly to themselves, such as friendliness towards pupils, encouraging understanding, and getting many pupils into secondary school. Teachers on the other hand tended to prioritise those qualities with direct relevance to themselves and their work, such as good behaviour, appearance and following the syllabus.

**Table 6:** Ranking the Qualities of a Good Teacher (School B)

| *Pupils' response* | *Teachers' response* |
|---|---|
| 1. Good education | 1. Good education |
| 2. Gets many pupils into secondary school | 2. Commitment |
| 3. Commitment | 3. Good behaviour |
| 4. Love of teaching | 4. Appearance |
| 5. Prepares for lessons | 5. Willing to learn from others |
| 6. Friendly to pupils | 6. Follows syllabus |
| 7. Helps children understand | 7. Prepares for lessons |
| 8. Good behaviour | 8. Helps children understand |
| 9. Gives examples | 9. Can use and make teaching aids |
| 10.Strictness and discipline | 10.Gives examples |
| 11.Willing to learn from others | 11.Love of teaching |
| 12.Gives feedback | 12.Attends classes |
| 13.Follows syllabus | 13.Is active in classroom |
| 14.Flexibility | 14.Gets many pupils into secondary school |
| 15.Can use and make teaching aids | 15.Friendly to pupils |
| 16.Attends classes | 16.Encourages interest |
| 17.Encourages interest | 17.Flexibility |
| 18.Is active in classroom | 18.Gender |
| 19.Appearance | 19.Strictness and discipline |
| 20.Gender | 20.Gives feedback |

During interviews, pupils noted the need for a teacher to help pupils understand during lessons, and that teachers should be fair-minded, give feedback and attend classes regularly. Several pupils thought that a good teacher should beat a student in order to correct mistakes, and judging by the constant sound of beating throughout the day, teachers thought this necessary also, even though this received a very low ranking by pupils and teachers as a means of helping pupils learn. Other pupils cited being beaten without reason as their chief dislike of school. One teacher thought that poor teachers could be *"too strict with nothing else to offer"*. As at School A, this highlights the differences between an ideal in the minds of pupils and teachers and the reality of the everyday situation.

### *2.4.4 The Learners*

School B pupils were not asked to draw maps of their daily activities. Since they come from a village which bears many similar characteristics to the village of the School A case study, the assumption could be made that their non-school activities are also similar. One difference observed about school pupils at School B was the greater degree of poverty in general. Many of the children at the school have evidently suffered malnutrition, and are physically smaller than would be expected for young people of their age. A considerable number of pupils were seen to remain in the school grounds during the lunch break, unlike School A where the grounds emptied rapidly. Teachers stated that some pupils would not find any food at home at that time of the day; since there were no school meals they had no choice but to remain and play games or sit around until the afternoon session recommenced.

A group of pupils (four male and four female) were once again asked to say as a group why they thought some children go to school and others do not. Their responses are shown in Table 7.

At this school, it is interesting to note that learners seem more aware of the idea that education might have an intrinsic value, rather than being purely a means to the end of obtaining a job. This may be a reflection of the learning environment of the school, and the headteacher's interest in education.

**Table 7:** Ranking why children do or do not go to school, School B.

| *Why do children go to school* | *Why do some children not go to school* |
|---|---|
| 1. To get education to help in life | 1. They don't know the importance of education |
| 2. To learn how to read and write | 2. Health problems |
| 3. To learn things to help the nation of tomorrow | 3. Parents cannot meet school costs |
| 4. To get a job | 4. Some parents do not follow progress of schooling |
| 5. To learn how to help our parents | 5. Girls are discouraged because of tradition |
| 6. To learn about current and future events - to be future leaders | 6. Afraid of being beaten by teachers |
| 7. To learn about science and technology | 7. Involved in petty business or mines |
| | 8. They have to help their parents (look after cattle) |
| | 9. Some are taking drugs |
| | 10.Because their parents have passed away |
| | 11.Marriage |

### *2.4.5 Teaching Learning Processes*

#### *The curriculum and content of learning*

Teachers interviewed felt that the curriculum was very problematic. The head-teacher pointed out that, in the old curriculum still being used, there were too many subjects (13), and that this was too much for pupils to deal with; *"pupils don't get any sufficient education...it's not good to put too many things in the head of a young student"*. Much of the content was thought to be irrelevant to the lives of young rural children, since according to the head teacher, *"When they go home there are no such things there"*. The Science and Technology content in particular was seen to be far removed from rural life.

The situation is worsened, according to teachers, by the absence of any of the recommended teaching aids and resources, and also a shortage of textbooks. Teachers' guides, the "bibles" of primary school teachers, are not available for those courses which have a new syllabus. KiSwahili is a particular problem area, as teachers were warned sternly by inspectors that they should not refer to the old guides, which contain messages supportive of party policies now abandoned. Further, new KiSwahili terminologies are not included in the old books. Unfortunately, the new guides, supposedly available in 1993, cannot be obtained from anywhere. In some subjects, the syllabi have been received without any textbooks, and in others, some textbooks have arrived without syllabi and teachers' guides. The newly introduced subjects like Life Skills and Civics have no materials at all, so teachers are left to struggle on their own.

Teachers felt frustrated that the centrally developed curriculum was constantly changing and inadequately supported with reference materials. They rated highly the need for teachers to be consulted in curriculum development. The head teacher felt strongly that teachers should become involved in the curriculum development process, rather than the curriculum being developed solely by a team within the Tanzania Institute of Education. As he said, *"We are the ones who know more deeply than themselves. We are the ones with the experience; because they have not taught for a long time they can forget something."* Teachers noted instances where the curriculum failed to account for the great diversity of agro-ecological conditions throughout the country. One example was the description of seasons in the syllabus and books, which in practice vary enormously from region to region.

Teachers felt strongly that they were overloaded, having to teach from morning until the end of the school day with very little time for preparation. Lessons divided into 40 minute periods clearly did not allow sufficient time for the content to be dealt with in detail. Also there were neither books for schemes of work nor formats for lesson plans, which discouraged teachers from adopting an organised approach to their work.

### *What takes place in the classroom*

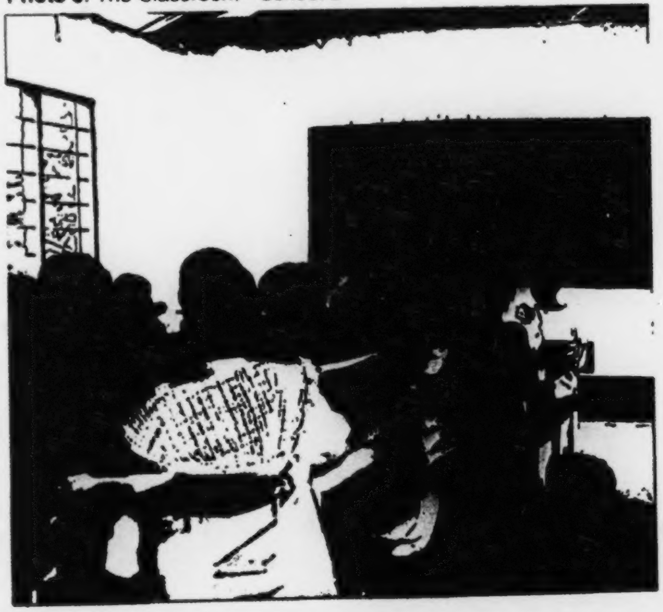
Teaching practice, at school B, involves much teacher talking and writing on the board, plus considerable use of singing and chanting by pupils. In a Standard III English class observed, the entire lesson revolved around the teacher making a statement, based on an object or objects held up, which was repeated in unison by the pupils. When the statement was changed or became more difficult it was noticeable that only a few pupils were sure enough of what was being said to repeat it perfectly; others mumbled, clearly listening to those who were calling out loudly. On repetition, the entire class could soon recite the sentence perfectly. This process sometimes led to confusion, as follows:

Teacher (holding up a book): *This is a book*
Pupils: *This is a book*
Teacher (holding up three books): *These are books*
Pupils: *These are books*
Teacher: *How many books are there?*
Pupils: *How many books are there?*
Teacher: *No no no, count! How many books are there? One, two, three!*
Pupils (very hesitantly): *There are three books.*

Another example from the same lesson:

Teacher (holding up a spoon): *Is this a spoon?*
Pupils (fading rapidly)*: Is this a.....*
Teacher: *No, no. Is this a spoon?*
Pupils (some): *These are spoon*
Teacher*: Is this a spoon?......moja, moja!!* (one, one!)
Pupils (some, hesitantly): *This is a spoon*
Teacher: *This is a spoon!*
Pupils (all, loudly): *This is a spoon!*

Photo 5: The Classroom - School B



Ultimately all the pupils did repeat the sentences correctly. It was unclear, however, whether they had learned the meaning of the sentence, or whether their skill lay in expert mimicry. In a Standard V English lesson observed (Photo 5), pupils obviously had a greater understanding of what they were reading, although in a class of 65 there was one book for every seven or eight pupils. As the pupils were sitting in rows, half of each group were effectively reading the book upside down, but still managing to repeat in unison the short sentences read aloud by the teacher. One ramification of this strategy of chanting, along with the frequent use of singing, is the sheer noise emanating from each classroom. Since the roofspace between each classroom is not sealed, it is sometimes almost impossible to hear the teacher talking if the pupils in the adjoining room are singing or chanting.

In observed classes, a typical pattern of teaching was as follows:

- teacher and pupils exchange greetings
- teacher refers to the previous lesson
- pupils sing a song
- new topic is introduced
- teacher follows teacher's guide (when available) with class
- pupils sing
- teacher gives exercises to pupils

The time allocated to content rarely exceeded 20 minutes. In addition to the above activities, teachers regularly beat students. Beating a class of 65 would in itself take up at least 5 minutes of the lesson time. Teachers noted also that they found it difficult to use group work because of the lack of time available for teaching each subject and the overcrowded conditions.

"Tuition" is being used as a means of boosting the chances of those pupils whose parents can afford it. Four teachers are involved, and these were chosen by the head teacher on the basis of their ability to deal with difficult subjects such as Mathematics. It was explained that "tuition" , offered three evenings per week, was different to normal teaching as groups were small (around 5-15 per group) and much more time was spent on doing exercises. The cost was Tsh500 per month, and for this reason was unpopular with most teachers who felt that the extra effort involved was not rewarded sufficiently. The headteacher admitted that teachers would tend to favour those pupils to whom they gave tuition in the normal teaching sessions, and this meant that those who were prepared to pay tended to reap the educational dividends in terms of progression to secondary school. He went on to say that he had tried to persuade all parents to send their children to tuition, but some parents questioned why they should be paying extra for something which the government was supposed to provide anyway. As a result, some teachers had decided to give extra teaching to a whole class for free.

### *Teachers' views on teaching and learning*

Both teachers and pupils were asked to undertake a matrix ranking exercise, to find out how they ranked different methods used to help pupils learn. The same list of methods was provided as at School A, these having been drawn from points raised in interviews with teachers, pupils and parents at both schools. The response from the teachers (two males and two females) is shown in Table 8.

**Table 8:** Summary of Matrix Ranking of Ways of Helping Pupils Learn: Teachers at School B

| *Rank* | *Method* |
|---|---|
| 1 | Pupils doing practical activities |
| 2 | Teacher giving examples |
| 3 | Teacher talking or reading to pupils |
| 4 | Teacher asking questions |
| 5 | Pupils asking questions |
| 6 | Pupils singing or reciting |
| 7 | Pupils writing about their own experiences |
| 8 | Pupils helping each other |
| 9 | Pupils talking about their own experiences |
| 10 | Teacher beating pupils |

Teachers ranked "pupils doing practical activities" and "teachers giving examples" as the strategies which were most helpful to pupils' learning. Reasons given for this were that practice and doing examples contributed greatly to understanding. Teachers gave a very low ranking to beating as an effective way of helping pupils learn, even though beating was common throughout the school. Singing was seen as a useful method, and this was borne out by its regular usage, as mentioned above. Teachers did not give a high ranking to pupils writing or talking about their own experiences. Reasons for this are discussed below, under Issues.

When asked to rank the inputs which they thought would improve teaching and learning, teachers (two males and two females) highlighted training, and greater involvement in curriculum development as most important. The ranking produced was remarkably similar to that from the teachers at School A. The point made earlier about the possibility of "researcher influence" may apply here also (Table 9).

### *Learners' views on teaching and learning*

The results from the group of pupils (four males and four females) who completed the same matrix ranking exercise as the teachers is provided at Table 10.

It is interesting to note that, although the pupils and teachers were not aware of each others' responses, the first two positions were exactly the same, "pupils doing practical activities" and "teacher giving examples". Beating was knocked off the bottom position by singing, rather surprisingly. Evidently teachers thought more highly of the use of singing than the pupils who carried out the ranking exercise. One of the pupils from a Standard VII class stated that singing was more appropriate for younger children. The volume of the chorus emanating from Standard I, II and III classrooms suggested that this was indeed true.

In interviews, pupils noted that the limited opportunity for practical activities and the heavy emphasis on theory led to them finding learning difficult in school. Learning at home, on the other hand was thought to be easier because children learned by doing, reading and writing was not involved, and there was no time limit on any activity. Learning about agriculture was thought to be quite different at home to that at school, since at home it was practical, whilst at school it was entirely theoretical, there being no school garden. Mathematics, was identified by some pupils as their favourite subject but also as the most difficult, especially due to the lack of textbooks and the many principles involved. Science and English were identified as other popular subject areas. One boy said that he liked Science because it helped him to think about developing simple machines which could be used at home, for example for cutting grass. Another said that he liked mathematics because it would enable him to understand about money and avoid being cheated. English was popular as it would allow pupils to interact with *Wazungu* (white people) who they might come across in Arusha. Pupils felt that what was learned at school was more important than what was learned at home because many more things could be learned, for example writing, *"drawing a world map"*, *"history from long ago"* and world issues. Another important factor was that those things learned at school would be examined. Pupils attached a high degree of importance to passing examinations, as this would help them ultimately to gain a good job, and so help their parents in the future. Examples of career aspirations of pupils interviewed were to become teachers, doctors, nurses, a policeman, a member of parliament and a chief accountant. All pupils interviewed stated that they wished to continue on to secondary school, preferably a government boarding school as they would have more time for study there.

**Table 9**: Inputs needed to improve teaching and learning: Teachers at School B.

| *Rank* | *Inputs* |
|---|---|
| 1. | Training for teachers (long courses) |
| 2. | Consultation in curriculum development |
| 3. | Seminars and workshops |
| 4. | Teaching aids |
| 5. | Textbooks |
| 6. | Stationery (paper, books, pens) |
| 7. | Furniture |
| 8. | Buildings |
| 9. | Smaller numbers in class |
| 10. | More secondary school places |
| 11. | School inspections |
| 12. | Higher salaries |
| 13. | Support from District Education Office |
| 14. | Support from community |
| 15. | Resource centres |

**Table 10**: Summary of Matrix Ranking: Pupils at School B

| *Rank* | *Method* |
|---|---|
| 1 | Pupils doing practical activities |
| 2 | Teacher giving examples |
| 3 | Teacher asking questions |
| 4 | Pupils helping each other |
| 5 | Pupils asking questions |
| 6 | Teacher talking or reading to pupils |
| 7 | Pupils talking about their own experiences |
| 8 | Pupils writing about their own experiences |
| 9 | Teacher beating pupils |
| 10 | Pupils singing or reciting |

### *2.4.6 The Home Environment*

Parents interviewed stated that they thought relations between the school and community were good. They regretted that they were unable to provide more than they had, especially land, but they noted that this was in short supply for everyone. They were proud of the fact that, in the previous year, community members had contributed a million shillings; this was due to be used to construct a new office for the head-teacher and a new classroom. Although they stated that it was every parent's aspiration for their child to progress to secondary school, they knew also that there were insufficient places, nationally, and that they should be realistic about their chances. Ultimately their goal was for their children to come back *"more advanced"* than their farming parents, either as *"Ministers"*, *"civil servants"* or at least as skilled agriculturalists who could give advice on matters of production; *"most farmers are lowly educated and would like their children to go beyond what they have"*. Having said that, one parent also stated that he would like his children to help him become a better farmer, even if they were not farming themselves.

Parents felt that in general, teachers were doing their best for the pupils. They felt in-service training and academic advancement of teachers was vital, again in Mathematics and Languages, but also in Agriculture. With regard to school pupils, one parent stated that children who attended school tended to be more respectful and cheerful than those who did not. Even so, it was said that, in the minds of many parents, a child who failed to progress to secondary school might as well have had no education at all. This was because parents felt that primary schooling did not equip school leavers for life and work, and that 7 years of schooling was insufficient. There was some debate about this, however, during the group interview. One parent stated *that "those who come home after 7 years are sometimes more dumb than those who never went to school"*. Another thought that some education would be bound to enlighten a child to some degree. There was general agreement that children should go to secondary school if at all possible, either by selection to a government school, or by paying privately. It seems that wealth of parents will frequently be the deciding factor in the educational life of a child.

The parents interviewed were members of the school committee and said that they took a personal interest in their children's education and the education of the village children in general. They pointed out that this positive attitude was not universal, however, and that many parents who had never attended schooling themselves showed little inclination to support the development of the village school. Around 50% of parents had achieved Standard VII schooling. One parent stated that, for children to gain the most from schooling, it was necessary for them to know that they had their parents' support. According to the parents, young children in Standard III or below frequently talked about school when they came home, but older children became more reluctant unless they had performed particularly well. This inclination to talk about school depended also on the relationship between the parents and child, and whether parents asked their children questions or asked to look at their exercise books. One parent stated that he welcomed constructive questions from his children, but these should be *"within the bounds of the parents' expectations"*. It was thought that most parents in the village would not want their children to be too inquisitive, nor to talk openly about home life in school as this was confidential.

Pupils interviewed described ways in which they applied what they had learned at school in the home environment. Examples given related to cooking techniques, AIDS awareness *("not sharing toothbrushes and razors")*, having a balanced diet and crop planting techniques. They stated also that the respect for elders learned at home was helpful to them at school. One boy mentioned that he had been taught to draw the map of Tanzania by his brother before he started school, and duly demonstrated his ability to reproduce it. The comment was made also by pupils that parents usually did take an interest in their work, and would often ask to see their school books. It seemed not to matter whether the parent was literate or not as *"even a parent who has not been to school can recognise a tick or a cross"*. In general it was thought that fathers were more interested in their children's work than mothers, perhaps because many more mothers had not attended school.

### 2.4.7 Contextualising Teaching and Learning

Teachers at School B said that they did try to relate teaching and learning to the pupils' experience, but were limited by their own knowledge of how to do this, the constraints of the syllabus and teachers' guides, the large class numbers and the lack of time available. Teachers gave examples of areas of the curriculum which could be linked to pupils' experience in the English syllabus; sections on *"the farm"*, and *"soil"*, for example. In KiSwahili, parts of the syllabus cross reference with Civics (although there are political implications here) and Agriculture, such as marketing of crops and beekeeping. The topic of *"time"* appears in both the mathematics and English syllabi.

One teacher was observed to encourage his pupils to become involved actively in an English lesson in which the topic was road safety. This involved the pupils learning the difference in right and left, and the rules for crossing the road. In order to demonstrate this, the teacher, recently qualified and obviously enthusiastic, took the class outside to parade around, and to imagine that they were crossing the road. All instructions were given in English, and the pupils appeared to enjoy the practical activity. The teacher explained that the previous lesson was based on the preparation of breakfast, and pupils had made tea for themselves.

Other teachers said that they routinely brought in objects or asked pupils to bring in items which would then form the basis for a lesson. Examples were given of oranges divided into segments for Mathematics and different foodstuffs for Domestic Science. Pupils were also asked to describe how their mothers cooked the family food, with an aim to inform pupils (especially girls) about ways in which the cooking could be adapted to avoid loss of nutrients. In particular, pupils were encouraged to tell their mothers to wash food before cooking it, so that the water in which it was cooked could be used as a stock base rather than being thrown away. One teacher said that she had visited some of her pupils to find out if this was happening, and, apparently, mothers were taking up the advice. Several girls also cited this example, and clearly had given a good deal of attention to it, possibly because, according to them, it was the only practical activity they had carried out in the subject. Another teacher described how in English lessons she would refer to household or other familiar items when introducing new vocabulary. Other examples mentioned by pupils were talking about what they did in the morning from when they got up, or bringing in clothes for washing. They thought that such activities were good because they were familiar to everyone and *"everyone can see it"*.

Teachers interviewed stated that they thought pupils enjoyed lessons which involved something with which they were familiar, and their motivation increased as *"the subject becomes more lively"*. They noted too that pupils who could see a link between the home and school environments appeared to understand better, would tend to experiment on their own and remember what had been learned for a longer period. This was said to be indicated by improved test scores at the end of each month. Pupils were not asked to describe their home life, however, either verbally or in a written form, because it was felt that this could be intrusive and discriminatory towards those who came from the poorest families. As noted above, in the matrix ranking exercise, both pupils and teachers gave a low priority to pupils talking or writing about their own experiences as a means of encouraging learning. When questioned, pupils seemed unsure whether this was really *"learning"*. Teachers said that they were more concerned about the risk factor, since pupils might *"talk about anything"*, including things they do which are bad. Smoking was cited as an example of a bad activity. When asked if pupils talking about *"good"* or socially acceptable activities could form a basis for effective learning, teachers were more enthusiastic, but still were worried about how to control what they felt was a potentially dangerous situation. They thought that in-service training could help them to refresh and develop new skills in this area, since they acknowledged that their tutors in pre-service training courses encouraged them to use this practice, but faced with the realities of primary schooling in a rural area, most teachers lapsed into traditional methods. Although the head-teacher felt that integrating pupils' experience into the learning process was particularly suitable for younger children, he noted that the pressure to use chalk and talk increased towards Standards V, VI and VII. As the threat of examinations becomes imminent, teachers said they felt that it is necessary to hammer the content home as much as possible.

Parents interviewed thought that linking school and home must be a good idea in principle, saying that they were interested in the idea and how teachers might manage to do this.

### *2.4.8 Using agriculture as a means of contextualising teaching and learning*

With regard to agriculture being used as a source of familiar material, some teachers interviewed felt that their knowledge of local agriculture was insufficient. This problem was heightened by the fact that there was no Agriculture teacher in the school who could act as a resource base for other teachers. The presence of such a resource person was thought to be very desirable, particularly as it is very common for teachers to help each other when faced with academic problems. The head teacher thought that agriculture was a very good medium to use in a range of subject areas, for *"They (pupils) live with those things, coffee, cows; they have already got a picture in their brain"*.

One teacher stated that he had used an agricultural theme to teach an English lesson. This was actually a topic included in the teachers' guide, entitled *"A visit to a farm"*, for which the teacher intended to take the class on a visit. The content of each topic was given in the textbook, but the teacher was developing strategies himself which moved away from the chalk-talk-chant approach. As he said, *"My teaching aids are outside"*. He illustrated this with the example of teaching the English word *"bunch"*; pupils had difficulty grasping the meaning of this until they were taken outside and shown a bunch of bananas on a nearby tree. According to the teacher, *"it makes a picture and the pupils understand"*. Parents also said that they thought that agriculture was a good way of linking school and home learning, since they liked their children to practice at home what they had learned at school.

### *2.4.9 Issues Arising from School B Case Study*

It was ironic that School B was selected as the "average" school rather than the "innovative" school for the Tanzanian case study, since in terms of the focus of this research, there is evidence that contextualisation of learning is actually being practised by some teachers at School B. Abstract concepts are sometimes based on the experience of learners, and use is made of the local agricultural environment for the teaching of non-agricultural subjects. Also, a more immediate understanding of the concept of contextualising learning seemed to be reached by teachers, pupils and parents. This could, partly, have been due to the researchers becoming more skilled at explaining the concept, but the fact that some teachers were using consciously the local environment and pupils' experience as a resource for learning must have been an enabling factor. This does raise an important point, that many teachers need help to recognise which of their daily practices are valuable in improving the effectiveness of teaching and learning. The lack of support and guidance meant that this rarely happens at School B. It was pleasing to discover during the final visit that the staff of the school felt that they had learned something themselves from the research process, and were viewing it as an unexpected and unusual form of inservice training. A demand was expressed very strongly for further training and professional support which would enable teachers to develop their capacity to contextualise learning.

A particularly important factor observed at School B was the collegial atmosphere amongst teachers. The welcome in the cramped staffroom from all teachers was extremely warm; teachers appeared to involve their pupils more actively in classes, and tea and lunch breaks with the researchers became small, cheerful parties. Even the interest from onlooking pupils during the data collection sessions became almost overwhelming. The head-teacher had attended two inservice training courses relating to management issues, and even though this is very little in a 17 year career, lessons appeared to have been learned. He continues to read about educational issues by obtaining various literature, although this is difficult, and a willingness to reflect on his practice does appear to be paying off. As a result, teachers may feel more comfortable and supported, and hence more prepared to adopt alternative approaches to teaching and learning. As mentioned earlier, there seemed within the school to be a commitment to education as a good in itself, as well as a means to an end, from teachers, parents and pupils. The creation of such an atmosphere is clearly important for the introduction of innovative practice.

Still, certain problems remained to be overcome. Books, pictures and other resources are still conspicuous by their absence from classrooms. Teachers are concerned about the risk of encouraging pupils to take more than a minimal degree of control over their own learning. Pupils feel also that teacher-knowledge equals learning, and do not seem to recognise that their own experience is both useful and valid. Parents are concerned about the potential breaking of boundaries between the home and school environment but, encouragingly, acknowledge the potential benefits of building closer links between school and the local community as a whole. It is clear from this case study that the development of these links should encourage the contextualisation of learning, since a greater knowledge and understanding of school and community life would be shared. In turn, using experiences familiar to the lives of learners, notably agriculture, should enhance the development of these links. A reciprocal relationship emerges, therefore, between the development of contextualised learning and improved school-community links.

The warmth and determination displayed by teachers at School B was impressive, and indicated a desire to provide the best possible education for their pupils under conditions made difficult by disorganised bureaucracy and local poverty. Teachers, pupils and parents alike have high aspirations for the future of themselves and of others, but frequently noted was the awareness that the problems being faced by villagers were national and overwhelming. It appears that the local community is doing much to support its primary school, and the desire was expressed by many of those interviewed that teachers should be given the opportunity to overcome at least some of the obstacles through the provision of support and professional development programmes wherever possible.

# 3 Findings from the Country Study

The findings of this research indicate that, in Tanzania, a very large gap exists between the plans made by centralised curriculum developers and educational policy makers on one hand and the reality of daily life in schools on the other. Problems exist in both urban and rural schools, some of which are very similar, such as dilapidated buildings and a lack of equipment, and others which are more area-specific. Urban schools tend to have much larger class sizes, of up to 150 pupils. Rural schools still suffer from large class sizes, but not to the same degree. On the other hand, rural schools suffer because their development depends largely on parental contributions, which in turn depends on parental perceptions of the value of education; many rural people have very little cash income and are becoming more reluctant to spend it on education which seems to be failing their children and themselves. This is because the goal of many parents is for their children to give them economic support in future years. This is less likely to happen if their children do not gain a place in secondary school, are unable to find employment, or lack the skills and knowledge which would enable them to set up business on their own. Hence the anticipated rates of return are much less, and the investment dries up from the grassroots. Teachers also are becoming demotivated as their salaries remain low and are difficult to obtain, especially in rural areas where transport is lacking or extremely expensive. Schools in rural areas also lack access to information, there being few radios or newspapers available, and even fewer visits from schools inspectors who have no transport to reach the remoter schools.

Many of the teachers who contributed their views in this research are disillusioned with their working conditions and the lack of opportunity for professional development. Constant curriculum changes, an inflexible examination system, few secondary school places and an over-reliance on books and materials which cannot be obtained are strangling the process of teaching and learning. Teachers resort frequently to physical punishment. Teachers' salaries are insufficient for normal living expenses. In order to ameliorate this situation, headteachers may try to reward their staff in some way, perhaps by giving them small presents occasionally, funded by proceeds from the school *shamba*, but this is impossible where a school has no land or opportunities for income generation. As a result, teachers *"cannot afford life"*, as one headteacher put it, and look for other opportunities for income generation to the disadvantage of their pupils. For all these problems, some teachers are committed to their profession and "*love teaching*", saying that they would like to continue their careers as teachers. Many teachers interviewed, including some of those who are frustrated with their lot, mentioned that teaching is an important way of serving the community and of helping others.

A particularly worrying issue is the evidence for a link between parental income and educational progression of school children. Those who can afford it will pay for extra tuition for their children. If their children fail to gain a place in government secondary schools, they may pay for a place in a private school. The rate at which private schools, and even community-built day-secondary schools are increasing is worrying in itself, as the pool of experienced secondary school teachers is becoming more and more thinly spread. Thus the quality of teaching may be threatened at this level also. There is even the suggestion that teachers may deliberately underteach during normal lesson time to ensure that enough pupils will demand that their parents pay for "tuition". The quality of "tuition" itself is also suspect in some cases. According to one respondent, teachers advertise themselves as *"good"* teachers by dressing well and appearing confident in order to impress parents. *"When they see us with good clothing, they think we are good teachers"*.

Contextualisation as a means of improving learning is close to Nyerere's original concept underlying "education for self-reliance". Teachers like the idea of it, as long as they feel in control of the situation to some degree, and are encouraged to adopt it as a strategy during their pre-service training programmes. The benefit of having a *"picture in the mind"* when learning was mentioned on several occasions. Parents appreciate the idea of linking schooling to the home environment, as long as intimate details and confidentialities are not betrayed. Pupils describe the learning process at home as easier than at school because there is the absence of pressure from time, and because they are not called upon to deal with complex abstract concepts. If these preconditions for effective learning could be incorporated partly into school learning, the level of achievement might be improved; many respondents cited overloading of teachers and pupils resulting in exhaustion and boredom and the

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complexity and irrelevance of the curriculum as major obstacles to learning and performance. The obstacles are sometimes increased by schools inspectors, who, on their rare visits to schools, are likely to be focusing on achievement of educational objectives through transmission of content rather than through an integrated learning process. Teachers may even be reprimanded for attempting to use innovative teaching methods which stray from the rigid structure of the teacher's guide.

There is certainly potential for agriculture to be used as a means of contextualising learning in rural Tanzanian primary schools where it is common that more than 95% of pupils come from an agricultural background. An important point arising from this country study, however, is that agriculture varies tremendously from region to region, and even from village to village. The income of farmers may also vary considerably, as does the level of their education. There are implications here for the strategies a teacher must adopt in order to relate a child's agricultural experience to the content of the curriculum, since it is essential to take into account this diversity of experience as well as to be sensitive to the nature of the child's home environment, be it financially and educationally supportive or quite the opposite.

It is important to note that a gulf between community and school priorities will have a deleterious effect on the effectiveness of teaching and learning practices. As stated by the District Academic Officer, *"if authority at school is with the teachers and at home is with the parents, the pupils are caught in the middle"*. It is necessary to enable parents and teachers to work more closely together, in order to create a healthy climate in school. Appropriate teaching and learning strategies which link the home and school environments may help to bridge this gulf but in order to do this, teachers require training and support, and pupils and parents require information and reassurance that those aspects of their culture which they value are not threatened.

This study adds strong support to the idea that professional development of teachers is seen as a key to improving pupils' learning. Parents want to see the teachers of their children equipped to perform to their full capacity. Pupils expect teachers to be able to deliver the goods, enabling their children to progress to secondary school. Teachers rank training and support as the most important inputs they need. Policy makers want to see the teachers in their region receive training in order to motivate them and enable them to be more effective. Developments are taking place in other regions and districts to try to address this, such as the creation of teachers resource centres (funded by Dutch and Danish aid programmes), and the development of locally relevant curricula (funded by German aid programmes). Interventions such as these in the District where the research was carried out would be of great value to everyone involved in teaching and learning.

# SRI LANKA

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# 1 Education in Sri Lanka

Sri Lanka has a long history of education with the recorded history being traced back to sixth century BC. Since the granting of complete adult franchise in 1939, special emphasis has been given to the expansion of educational activities existing from pre-colonial times. Since 1945, education has been offered at no cost to all pupils from year one to the university. The constitution of Sri Lanka provides universal access to education for all, and equalising educational opportunities has been achieved to some extent by strengthening both formal and non-formal education. However, the government has placed more emphasis on economic growth of the country. Public expenditure on education was Rs. 9450 million or 8.2% of government expenditure in 1990. By 1995 expenditure was Rs.12204 million, but had dropped to 6.4% of government expenditure. Of the estimated 4.2 million school pupils, 49% belong to the primary sector where the pupil-teacher ratio at primary level is 28.7 pupils per teacher (School Census, 1994).

## *1.1 The Education System - Past and Present*

The education system in Sri Lanka classifies schools according to the level of classes in the school and whether the school is located in an urban, semi-urban or rural area (Table 1). In addition to this schools may be classified as 'disadvantaged schools'. These schools are often difficult to access, such as remote rural schools or those in the plantation sector. Families are usually poor and parental literacy rates are generally low. Consequently the disadvantaged schools tend to experience high drop-out rates and low attendance rates, poor teacher retention, low motivation and infrequent visits by educational officers.

**Table 1:** School Classification

| | |
|---|---|
| Type 1AB | schools having classes GCE (A/L) science |
| Type 1BC | schools having classes GCE (A/L) arts/commerce (other than science) |
| Type 2 | schools having classes upto year 11 |
| Type 3 | schools having classes from years 1-5 or years 1-8 |
| Small schools | schools with 1-2 teachers and less than 150 pupils in each school |
| Urban | schools within municipalities |
| Semi-urban | schools within urban councils |
| Rural | schools within Gramoda Mandalayas |

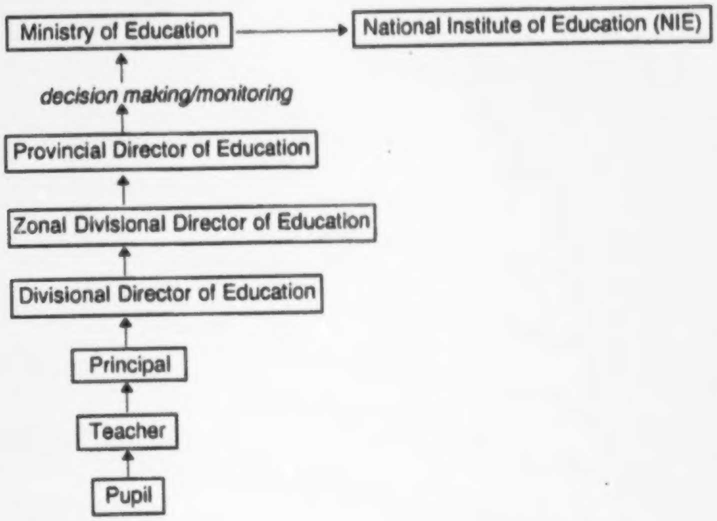
The present school system consists of a five year primary cycle from year one to year five, secondary education for six years from year six to year eleven, and collegiate level from year twelve to year thirteen. General education at these levels is the responsibility of the Ministry of Education and Provincial Ministries of Education through the school system (Figure 1). National curriculum, teacher recruitment and teacher salaries are the responsibility of the Ministry of Education. Teacher training, infrastructure facilities and teacher transfers are the responsibility of both the Ministry of Education and the Provincial Ministries of Education.

Schools in Sri Lanka have three terms, January-March (term 1); May-July (term 2); September-December (term 3). The Year 5 Scholarship exam takes place during August at the end of the second school term. School hours are 8 a.m. to 2 p.m. for years 4 to 9, and 8 a.m. to 12 a.m. for years 1 to 3. Lesson periods are forty minutes each.

In year five (end of primary school) all pupils must sit a national scholarship exam. Up until 1994 the exam was only for Language and Mathematics. Consequently, teaching concentrated on these areas to the detriment of other subject areas and the pupils obtaining a general education. In 1995, the exam was modified to two general question papers, one is an aptitude test and the other assesses the knowledge and skills on all subject areas in the primary curriculum, except Religion. Maths and Language still account for a large percentage (50%) of the total mark. Great emphasis is placed on this exam as the prestige of the school depends partly on the number of pupils who pass the exam. The scholarship exam determines which pupils go to Type 1AB and national schools. The scholarship exam is an issue of much debate and Little (1996) outlines a number of issues that have been highlighted by a range of stakeholders, which include:

- the distorting influence of the year 5 scholarship examination on the curriculum and pedagogy of primary education;
- low levels of 'mastery' in literacy and numeracy among year 5 primary pupils, combined with wide variations between schools, divisions, zones and provinces;
- substantial amounts of time spent by primary cycle students in private tuition;
- the concentration of resources in many schools on the post-primary classes and examination classes, and pressures on schools to upgrade to the next higher type.

**Figure 1:** Monitoring of the Education system


Ministry of Education
National Institute of Education (NIE)
decision making/monitoring
Provincial Director of Education
Zonal Divisional Director of Education
Divisional Director of Education
Principal
Teacher
Pupil

In 1972 major reforms took place in the education system which included an integrated curriculum at primary level and the provision of teachers guides, in all subjects and for all schools. The main objectives of the 1972 reforms (implemented between 1974 and 1978) were: learning to learn; flexibility; creativity; critical thinking and the ability to work in a group. A change in government led to the end of these reforms in 1977.

Revisions to the primary curriculum took place in 1985 and 1993. The need for reform was realised following the results of two research studies (Nagy, 1988; Kariyawasam, 1991) which revealed that achievements of primary school children in Mathematics, Language and Life Skills (Environmental Science and Basic Science) are disturbingly poor (Table 2) and that disparities in achievements are usually high between urban and rural pupils and between those belonging to different provinces. The new curriculum introduced in 1993 will run for five years to 1997. It is designed to promote learner-centred education with a view to creating a 'learning culture' which breaks away from the traditional 'teaching culture'. Emphasis is on activity based learning and active physical participation and an attempt has been made to select the content to suit children's interests, experiences and maturity levels while taking into consideration the demands of the twenty first century.

**Table 2:** Percentage of year 5 students attaining mastery level

| Literacy | % | Numeracy | % | Life Skills | % |
|---|---|---|---|---|---|
| Vocabulary | 33 | problem solving | 9 | health skills | 20 |
| Comprehension | 27 | knowledge of procedures | 13 | elementary science | 9 |
| Writing | 21 | Understanding concepts | 32 | environmental skills | 13 |
| | | | | duties and responsibilities | 43 |

*Source: NIE, 1994*

The National Institute of Education (NIE) was established in 1986 as an advisory body to the Ministry of Education and Higher Education and has made a valuable contribution to the school education system of the country. NIE is responsible for the design and development of the national curriculum. NIE consists of a number of departments including a department of primary education. The main focus of national goals are on equality of educational opportunity and quality improvement of education by moving, as stated previously, from a teaching culture to a learning culture. In 1990 a National Education Commission (NEC) was established. It formulated a set of nine goals and five basic competencies on education as outlined below:

*The Goals*

1. The achievement of a functioning sense of national cohesion, national integrity and national unity.
2. The establishment of a pervasive pattern of social justice.
3. The evolution of a sustainable pattern of living and a sustainable life style.
4. Seeking a livelihood and work opportunities that are at the same time productive and give avenues of self- fulfilment.
5. Participation of human resource development that will support socio-economic growth of the country.
6. Involvement in nation building activities and learning to care.
7. Cultivation of an element of adaptability to change learning to learn and adapt, developing competency to guide and change.
8. Coping with the complex and unforeseen and achieving a sense of security and stability.
9. Securing an honourable place in the international community.

*The Competencies:*

1. in communication;
2. in relation to environment;
3. in relation to ethics and religion;
4. in play and use of leisure;
5. in relation to learning to learn.

### *1.1.1 Department of Primary Education, NIE*

The Department of Primary Education is responsible for developing the whole primary school curriculum. Although the primary curriculum is integrated, it is developed in nine subject areas: Mathematics; Language (mother tongue); We and the Environment; Aesthetic Education; Creative Activities; Religion; Physical Education; English (from year 3) and Beginning Science (from year 4). Agriculture is not taught as a separate subject at primary level, but is integrated into Environmental Studies and Beginning Science.

At primary level there are nine educational objectives to be met:

1. *Literacy*

   To acquire the ability to exchange ideas clearly, read, write and carry out simple computations. The ability to recognise the alphabets of national languages other than that of the mother tongue.

2. *Healthy living*

   To develop, from very young days activities and attitudes leading to physical, mental and social health.

3. *Orientation to vocational skills and work experience*

   To develop manipulative skills needed for the future world of work, and to acquire a knowledge of work skills through appreciation of modern technology and its maximum utilisation.

4. *Awareness of heritage associated with history*

   To recognise national heritage and personal identity. To acquire knowledge of national heroes who built that heritage, and appreciation of and sensitivity to it.

5. *Attachment to religion and respect for virtue*

   To gain understanding of religions - practices, attachment to one's religion and respect for other religions. To develop virtues of a good citizen. Obtain practical experience in religious practices.

6. *Knowledge of the environment*

   To gain basic knowledge of gifts of nature, things created by man and one's environment, and as a result being directed to think scientifically. To develop attitudes that natural resources should be used, with due care and a sense of conservation of nature.

7. *Nourishment of children's needs and aspirations*

   To develop appreciation and enjoyment of spending leisure time fruitfully and meaningfully. To make the school a place of happiness through aesthetic experience.

8. *National unity*

   To live together with others of different religions and languages while protecting national identity.

9. *Development of values*

   To get adjusted to a life of love and affection for the animate and inanimate environment, living in a society with a sensitivity for each other.

Integration of subject areas is emphasised in the curriculum. Throughout the primary cycle a theme is visited and re-visited several times, to increasing depth. Teachers are encouraged to identify situations where intra-subject as well as inter-subject integration is possible. For example, under the subject *'We and the Environment'*, 'our food' is one of the themes that is discussed at all levels (years 1 to 5). The themes are, in year 1 'the necessity of food for work and growth'; year 2, 'eating a variety of food is healthy'; year 3, 'nutrients that we get from our food'; year 4, 'how does the market affect our nutrition and home gardening as an alternative solution'; year 5, 'food wastage from production to consumption and measures to avoid it'. From years 2 to 5, twenty themes are discussed in the subject *'We and the Environment'*, such as: Plants around us, Patterns in the Environment, The Way we Grow, Human Behaviour, Animals Around us, Our Festivals.

The teachers' guide gives examples to enable the teacher to relate to and draw examples from the local environment. It also illustrates flexibility in the curriculum, as it enables the teachers to use what is available to them. Table 3 gives examples from two subjects in the curriculum. Teachers are trained through a system of Master teachers. The Master teachers are trained at the Department of Primary Education, NIE.

**Table 3:** Examples from the curriculum

| Year | Subject (theme) | Example |
|---|---|---|
| 5 | Environmental Studies (Plants around us) | Endemic, endangered and exotic tree species in Sri Lanka, find a few examples. |
| 4 | Environmental Studies (Plants around us) | Protecting Trees - types and uses of forests |
| 3 | Environmental Studies (Plants around us) | Looking for places where plants grow and find out the needs of a plant. |
| 5 | Environmental Studies (Our food) | food wastage at production, transportation and consumption. |
| 4 | Environmental Studies (Our food) | Study the market and nutritional value of produce.<br>How do children view the importance of having a home garden?<br>Characteristics of a home garden.<br>A lecture/demonstration by an agricultural extension officer. |
| 5 | Beginning Science (Plants) | Pupils should observe changes that are taking place in the surrounding environment. Identifying matter that decays naturally in the environment.<br>Relate this to the experience gained from doing experiments on decaying matter (composting/mulching) in the experimental agriculture plot. |

In 1995 a primary education unit was established in the Ministry of Education and Higher Education and a policy on primary education was drawn up. Following the curriculum changes in 1993, a new Master Plan for Education is at present being drawn up, which includes measures for monitoring the quality of primary education. The plan is designed to contribute to the improved efficiency, increased equity, increased participation and improved quality of education in the primary sector. These changes will begin to take place from 1998 as feasibility studies are already underway. The changes will affect both primary and secondary levels.

### *1.1.2 The Current State of Education*

According to a recent report (UNICEF, 1996), "with the long-standing commitment to free education for all, Sri Lanka has achieved near-universal access to primary education. Over 90% of school-entry aged children enter school, and over 90% of them complete the primary school cycle". Around 10 per cent of the 5-14 age group do not participate in formal education. Non-enrolment is mainly in pockets of disadvantaged areas such as urban slums, deprived rural areas and the plantation sector. At Jomtien 1990, Sri Lanka pledged to achieve 100% literacy rate by the year 2000. It also vowed to achieve access to basic education and the completion of primary education by at least 99 percent of the primary school going age children by the year 2000. This will entail near total elimination of drop-out at primary level. Mastery in literacy, numeracy and life-skills at basic education level are to be achieved by improving learning levels. In order to improve goals were set to:

1. reduce repetition rate in primary school to 11 percent by 1995;
2. reduce class-size to 30 and teacher-pupil ratio to 1:26 in primary school; and
3. reduce area-wise disparities in distribution of facilities. (Gunawardena, 1996)

The literacy rate in Sri Lanka is also high at approximately 91% for males and 83% for females, with an overall rate of 87% (MOE, 1991). A recent study by Gunawardena *et al* (1996), has found that actual literacy and numeracy rates are lower than those claimed, especially in socially and economically disadvantaged groups (e.g. urban slums, plantation sector). They found that, for example, rural peasant communities claim a literacy rate of 92% and the plantation sector claims a literacy rate of 73%, whilst the actual rates are closer to 60% and 58% respectively. Literacy and numeracy rates in the urban slums showed the highest disparity, with an actual rate of 31% literacy and 51% numeracy as opposed to claimed rates of 68% and 81% respectively. In 1991 the overall repetition rate was 9.25% and the dropout rate was 4.37%. At primary level the repetition rate was between 5.4% and 8.7% and the dropout rate was between 0.3% and 2.5% (NIE, 1995).

Present donor funded projects in the primary education sector are:

- engaging in an exercise to identify the essential levels of knowledge and skills in Language and Maths that pupils in years 1 to 5 should possess prior to reaching the next grade. (responsibility of NIE, funded by UNICEF);
- implementing a programme, funded by UNICEF, on "education for conflict resolution" (a programme to 'promote peace and harmony between children of various groups), in Western, Central and Southern provinces (NIE, 1996);
- process and learning experiences based on an experimental agriculture plot and the introduction of a nutritious mid-day meal in schools (responsibility of NIE, funded by UNICEF);
- developing material and methodology for multi-grade teaching (UNICEF);
- trying out a project to popularise English through reading (Wendy Pye, New Zealand);
- designing a project for Improving the Quality of Primary Mathematics Education (DfID);
- assessing the equality of learning in two developing countries. (Bristol University);
- publishing material based on experiences gathered through innovative projects (responsibility of NIE, funded by UNICEF);

# 2 The Schools

## 2.1 *Selecting the schools*

The schools were selected, following the indicators in the research guidelines, by officers in the Primary Education Department at the National Institute of Education. School A was chosen because of the use of its agriculture plot in teaching and learning in the school. This school is part of a pilot project in an externally funded primary education programme, which initiated the use of agriculture in the schools learning activities.

**Table 4: Summary of schools A and B**

| *Factor* | *School A* | *School B* |
|---|---|---|
| • school grounds | school experimental plot | no school garden |
| • years | years 1-9 | 1-11 |
| • type | type 3 difficult school | type 2 school |
| • Number of pupils m:f (total) | 112:101 (213) | 124:167 (291) |
| • average monthly family income | Rs. 250-750 | Rs. 2500-3000 (uncertain) |
| • main source family income | rice/maize/chena farming | vegetable/rice farming |
| • % main income is farming | 98% | 90% (70%)* |
| • % samurdhi | 50% (+29% on other grants) | 60% |
| • attendance rate | 70% girls, 85% boys | 65% |
| • drop-out | 1.3% | 10.0% |
| • repetition | 7.5% | no data |
| • teacher:pupil ratio | 1:23 | 1:18 |
| • major social problems | poverty | poverty; mothers abroad; alcoholism and drug abuse |
| • adult literacy rate | 30% | 98% |
| • number of families | 233 | 30-40/village, 7 villages close together |
| • number of teachers m:f | 8:2 | 2:14 |
| • no. years principal at school | 7 yrs | 5 yrs |
| • donor support | yes (international donor) | none |

## 2.2 *An 'Innovative' school - School A*

### 2.2.1 *The Community Environment*

The village lies in Uva Province, South West Sri Lanka. It is a poor, remote rural area where the majority of families are engaged in semi-subsistence farming. Average monthly incomes are estimated[1] to be Rs. 400 (range between Rs. 250 and Rs. 750 per month) which includes Rs. 250 given under the *samurdhi*[2] programme. Sinhalese is spoken in the community and all are Buddhists. The school was built in 1979, which accounts for the low literacy rate of thirty per cent amongst adults over twenty five years old.

Health standards are poor and malnutrition is a severe problem. There is a high percentage of cases of stunted growth and underweight children. According to a baseline survey carried out by NIE and UNICEF (1994) only 45% of the district population has access to safe drinking water (national average 57%). There are 2 tubewells and 6 common wells (bucket) in the village. There is no electricity and the majority of families rely on kerosene lamps. There are a total of 123 families who receive support under *samurdhi* poverty alleviation programme; another 56 families receive food stamps, and 12 families receive a charity allowance.

There are 12 disabled adults in the village and three children at the school with physical disabilities (thought to be caused by polio). No provision is available for mentally handicapped children or adults, though there were no recorded cases in the village. Both the community worker and health worker are known in the village. Infrastructure is poor, the village is 2 km from the nearest bus route. The largest town in the area, Mahyingana, is 14 km away.

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[1] *no official figures available estimates are from principal of the school*

[2] *poverty alleviation programme, formerly known as 'Janasaviya'*

### *Agriculture*

Farmers in this community are very traditional in their agricultural practices and use few modern methods. Subsistence agriculture is the livelihood of 98% of families in the village and the average area farmed per family is three acres. Paddy (rice) is the main crop grown and maize, finger millet, sesame and cow peas are the crops grown after paddy. The system of growing cash crops as an interim crop to rice is known locally as *chena*. Previously chena was a method of shifting cultivation in an upland area on encroached land, where cash crops were planted in an intercropped system. It is estimated that almost 80% of grain crops are cultivated under rain-fed conditions in chenas (MOA, 1995). The chena method of farming is causing serious problems in the country, especially where encroachment is on steep hillsides in upland areas. Soil erosion and land degradation are the results of clearing forested areas and the impact of heavy monsoon rains on these exposed areas. Recent policy recommendations (MOA, 1995), amongst other items, call for land allocation, improved land use and a programme of educational awareness.

The majority of farmers have little technical knowledge, which is evident in their farming practices. A report by NIE (1994), of a baseline survey carried out in a number of secretarial divisions remarks that *'the knowledge of cultivation practices among these farmers is found to be low; only about twenty per cent of them seem to have a good understanding of the practices they follow'*. The report then comments that *'the majority of them (74%) do not seem to have even a fair understanding of what they are doing. They are unable to adjust their practices according to changing climatic conditions and other constraints. They seem to be ignorant of evaluating their inputs against outputs and assess profitability of their activities. They need to be made aware of farm planning and techniques of preserving soil with their nutrients'*.

Yields for rice and maize are relatively low (a good maize yield was estimated at 350kg per acre). Chemical fertilisers are applied where hybrid rice varieties are used but no herbicides or pesticides are applied so pests, diseases and weeds are a problem. One farmer mentioned some organic methods he uses. Bark from a specific tree is put in the water inlets to the paddy fields which deters caterpillars. Mustard is sometimes planted amongst the millet to deter pests. Manure from cattle is used on the maize (collected and spread by hand). The farmers said that lack of water is a problem, although they appear not to store water, or have knowledge about water conservation and management. Whilst visiting farmers, it was noticeable that they all grow the same crops, and possibly in the same sequence; that is maize, followed by sesame, finger millet and cowpeas. Some vegetables (pumpkin, chillies) and fruit (bananas, oranges and limes) may be grown for home consumption.

October to January is *maha* season (north-east monsoon), March to May is *yala* season (south-west monsoon) and the dry season is between July and October (Table 5). Planting and harvesting depends on the weather; therefore, if one or other is delayed, children may be kept at home to help in the fields or look after younger brothers and sisters. During a visit to local farmers, one farmer said that *'due to later rains, planting of maize will have to take place at the same time as planting the rice, so I may keep my children at home to help'*.

**Table 5:** Agricultural Calendar

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| plant maize | | | | | | | | | | • | | |
| plant rice | | | | | | | | | | | • | • |
| harvest maize | | | | | | | | | | | | |
| harvest rice | | • | | | | | | | | | | |
| plant sesame/millet | | | • | • | | | | | | | | |
| harvest sesame/millet | | | | | • | • | | | | | | |

dry season

The farmers said that they receive no support from the agricultural extension officer. One farmer said he had contacted the extension service but no one had ever turned up. There is no marketing system for produce in the village. As the farmers all grow the same crops and they have no post harvest or storage facilities, they always get the lowest market price for their crops. Most of them sell to the local village stores, who provide extremely high interest loans to the farmers. The village shop gives them Rs. 3 per kg for maize, the market price is Rs. 18 per kg. Many families buy on credit, using the next harvest as collateral, if the crop fails they fall into deeper debt.

### *School and Community Relations*

The teachers and principal are well respected in the village. The principal considers that relationships between the school and community are essential in children's learning. Understanding the community and a specific family's problem will make it easier for the staff, who will know how to ask parents about things that are happening at home. For example, a specific family may have problems with labour on their farm, or a new child in the family, which means a child may be absent from school. If the staff know about these situations they will be more understanding towards the child. Staff get involved in community activities through, for example, attending village funerals, weddings and festivals. The parents and community members also say that there is a very good relationship between the school and community.

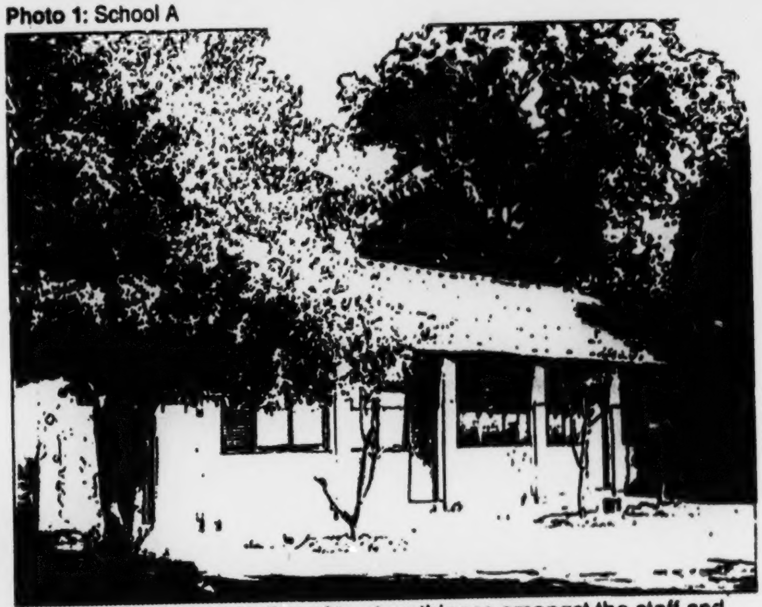
Part of an externally funded donor programme provided training in good farming practices to two parents and two teachers from the school. Following this, good relationships have been established between the school and community. The community know what is happening in the school, as pupils are used to relay messages and the community use the school as a centre for meetings. The parents and community members are able to borrow agricultural tools from the school. The community provides voluntary labour to repair buildings, and to do heavy work such as ploughing and fencing on the agriculture plot.

The principal said that he does not get invited to meetings if it is an outsider coming to talk to the village. He believes there are many officials who are corrupt and do not treat the villagers fairly. Only 30% of the villagers are literate and often they do not understand what is going on during these meetings, or what their rights are. The principal believes that if he was invited to these meetings, the community would get a better deal.

### *2.2.2 The School Environment*

The school was built in 1979. It provides for nine grades of pupils and is classed as a grade 3 'difficult' school due to the rurality of its location. It is well equipped, with enough wooden desks and chairs for every pupil. There are single and double desks, of two heights. Textbooks are supplied free to all pupils by the Government but pupils must provide their own exercise books. There is one main classroom (Photo 2), measuring approximately thirty metres by eight metres which is used by all years except year 5. There are few teaching aids on the walls, primarily because they are removed or destroyed when outsiders use the school for meetings, and there are three free-standing blackboards. Year 5 has a separate classroom, which was built, with the help of parents, by the teacher of year 5. The walls of this room were covered in various teaching aids, including a plastic globe suspended from the ceiling. The principal has a separate office, which appears to be open to anyone, as staff and pupils freely wander in and out. There is an obvious feeling of trustworthiness amongst the staff and principal. The principal's room had two large metal locking cabinets, which contain teaching materials.

**Photo 1:** School A



On the walls of the office are posters listing pupil enrolments, timetable, school plan, calendar, and a poster of the earth and planets (in English). There is also a height measure and a set of weighing scales for pupils to keep records of their growth (provided by external donor). The principal keeps accurate records of attendance and pupils attainment levels as required by the government.

### *Enrolment, Pupil Numbers, Attendance, Drop-out and Repetition*

There are 213 pupils enrolled in the school, 101 girls and 112 boys. The attendance rate is around 70% for girls and 85% for boys. During peak levels in the agricultural year attendance will drop as pupils stay at home to help on the farm or in the house. It has been noted that the attendance rate usually rises to around 90% on the days that cooking activities take place, as pupils know they will get a free meal; most days they arrive at school without lunch and without having eaten breakfast and the nutritional content of these meals is usually insufficient.

**Photo 2:** The main classroom - school A

The number of drop-outs in 1996 was three, one boy went into the priest hood, another went into manual labour and a girl married. The usual reason for drop-out are to help at home or on the farm. Where there are five or more children in a family, the eldest usually drops-out to help look after the younger children, as the majority of mothers help in the fields. Repetition rate is 7.5% over all years (16 pupils out of 213 last year). Year 3 has the highest number of repeaters at 4, but it also has the highest number of pupils in the class at 46 pupils. Drop-out often follows repetition, as pupils do not like to repeat a class, and as many of them will not continue their education after year 9, many of them see no point in repeating. To prevent drop out the principal moves them to the next year, even though their marks are not sufficient, in the hope that their marks will improve. Many pupils finish school after year 9 because parents cannot afford travel costs (despite subsidisation by the Government) to send their children to secondary school; the nearest is more than 5 kilometres away.

### *Monitoring, Assessment and Examinations*

The principal is not satisfied with the examination system. Examinations are held for years 2 to 9 twice a year (mid-term and end of year). At present exams are set by the district office and the principal believes they are unfair and not relevant to pupils' backgrounds. The major problem with the present exam system is the pressure put on pupils to pass the year 5 scholarship exam, the marks of which are used by the district office to evaluate the standard in the school. Teachers say the exam tends to inhibits the use of problem solving and social skills as pupils can pass the exam if they are able to mechanically repeat facts and figures.

There is no fair monitoring and evaluation procedure at present although NIE have recently devised an informal monitoring system, in Language and Mathematics, for years 1 to 5 of primary schooling. Ten pupils are picked at random from a class and then set a short test. The teacher then evaluates the papers on a scale of six indicator points and the results are used to evaluate competencies of that class. The evaluation can take place as and when the teacher feels it is necessary to monitor the competency levels in Maths and English of their class. Project work and practical activities, initiated by the school with the aid of a donor project, are continually assessed and added to the pupils end of year mark. The pupils know about this and it is an informal process.

### *2.2.3 The Teachers*

There are ten teachers in the school, eight male and two female. In 1994 there were only four teachers, but by 1995 five new staff had been appointed. Recently one teacher was replaced at the wish of the principal who was not happy with his teaching. All of the teachers, apart from one male teacher and the principal, are under thirty five years of age. This school is the first posting for four of the teachers, and of these four two have been here for seven years. The other teachers have been at the school for between two and three years, and one teacher had just started. All of the teachers live within a 10 km radius of the school and three teachers live in the village. At present a house is being built for the principal in the school grounds. The principal already has a house in the village so he is allowing some of the unmarried male teachers to move into the new house. Out of the seven teachers interviewed only three had teaching qualifications to degree or diploma level. The other four have trained 'on the job' through a distance education programme; they complete modules over three years, with some practical training at teacher training colleges. In 1994 the donor project held a short (four days) training course in innovative teaching methods; this was attended by the four untrained teachers only. The zonal education office organises INSET training on the national curriculum. This is held twice a year; the first session (four days) is general and the second session (two days) will be in specific subject areas.

The principal has been head of the school for seven years. He is a highly motivated, enthusiastic and innovative person who provides much support to his staff. The school has seen many changes in the past four years due to the school's selection for the donor funded project. As the total number of pupils in the school is low (213) the Government does not officially appoint a deputy principal, however the principal has, under his own initiative, appointed his own deputy principal who is responsible for educational activities (improving pupils' achievement levels) and making provision for absent teachers. Both groups of teachers were thoughtful about their roles as teachers and identified some of the following points as their main problem areas. The principal says that donor support over the past four years has put the school in a very good position. During the past year the number of teachers has almost doubled and he states that this has been an important impact on the effectiveness of teaching and learning in the school. However the school still has many problems:

- lack of training about different teaching methods, for example the use of games;
- lack of training in classroom organisation, specifically how to organise teaching and learning in a limited area with few resources;
- lack of training in materials development;
- need for specific training in physical education, music and drama education;
- need for training in first aid and health (recently a boy and his father were burned very badly in the village and no one knew what to do. There have been accidents at school and the teachers feel they would not be able to cope if there was a serious accident);
- lack of information on new agricultural technologies;
- need for finance for landscaping the school grounds;
- need for better information systems. The teachers feel very isolated, they rarely have a newspaper and feel that they are not informed of events by provincial and zonal education officers. Post takes two weeks or longer to reach the school from Colombo;
- need for musical instruments, physical education equipment, science equipment;
- need for community education programmes. The community relies on natural health cures, particularly traditional ceremonies. They need more scientific information and education on specific diseases to improve the health of the community (scabies, malaria and diarrhoea are common);
- insufficient classroom space which makes it almost impossible to walk between the desks. There are no partitions between the classroom areas (apart from year five class which is in a separate building);
- limited teaching and learning materials, especially teaching aids, exercise books, and extra reading material, all of which are necessary to motivate staff and pupils;

- need for funding to provide educational visits for the pupils, which the principal views as being extremely important, especially in developing a social and awareness skills of the pupils. He also feels that the pupils would benefit from visits to efficient farms, so they would be acting as a type of extension service for their parents;
- lack of proper assistance for talented pupils or those requiring special needs (although there are no pupils with mental disabilities, three have physical disabilities, one of which is considered to be very bright);
- there is lack of parental awareness and support in the school environment and in their children's schooling despite great efforts to get parents involved in the school. The principal states that this is a major problem.

All of the teachers feel they need more training and support in order to improve their teaching methods. They quoted methods in classroom organisation, strategies for change and forward planning, career planning and training in new teaching methods as important areas and ones in which they would like to go for training now. The majority of the teachers want to stay in teaching at the level of a teacher because they enjoy working with children and the satisfaction of seeing former pupils doing well. Only one teacher wanted to progress to the level of principal. Only one wanted to move to an urban school. Despite the problems listed above, the principal has no desire to move to another school, though he stated that had it not been for donor support he would not have stayed at this school. He believes he now has excellent staff and that together they can develop the school further.

### *What is a good teacher?*

The principal believes the pupils are satisfactorily motivated in the school, especially since the introduction of the experimental agriculture plot, cooking and project work. The staff all participate in weekly staff meetings and they are involved in all decisions in the school. The good relationship between all of the teachers and the principal was very noticeable and the atmosphere in the school was friendly, relaxed and happy between the pupils, staff and principal. The situation was summed up by the principal who said *'I like my staff - I have quality people'*. Table 6 illustrates responses, by pupils and teachers, to the question on characteristics of a good teacher. From the list it is evident that there is a strong emphasis on the personal relations between teachers and pupils. A possible explanation for this is that parents spend very little time with their children, especially when it comes to giving them advice and helping them with school work (parents interview).

**Table 6**: What are the characteristics of a good teacher? (School A)

| *Pupils' response* | *Teachers' response* |
|---|---|
| *A teacher should:*<br>• love the pupils<br>• explains things well<br>• come to school everyday<br>• smile<br>• not beat the pupils<br>• corrects exercise books and advise them when they have made mistakes<br>• write things on the blackboard<br>• draw diagrams<br>• ask pupils to come closer (then the pupils will feel that the teacher likes them)<br>• tell stories and sing<br>• allow pupils to tell stories<br>• use textbooks<br>• set homework<br>• not shout<br>• makes the pupils work in groups<br>• speak nicely<br>• give out extra reading material<br>• call the pupils by their names<br>• give good examples when explaining things<br>• not smoke or drink alcohol (in front of the pupils)<br>• be clean and wear nice clothes<br>• take the pupils outside to work and do practical lessons | *A teacher should:*<br>• love the pupils<br>• listen to the pupils<br>• be a role model to the pupils<br>• be dedicated<br>• be aware<br>• understand pupils and know their backgrounds, especially if a pupil may be absent because they have to work at home<br>• help pupils in other activities (e.g. visits)<br>• make pupils more aware of their surroundings<br>• help pupils at any time for any problem (e.g. if they are sick or have problems at home)<br>• be active and enthusiastic<br>• know pupils names<br>• be able to diagnose pupils' ability<br>• be happy<br>• have the ability to motivate pupils<br>• treat all pupils equally<br>• only punish when necessary<br>• have the ability to make decisions<br>• have a good relationship with the community<br>• be honest, trustworthy and cooperate with others<br>• get priorities right - put school first and personal matters second |

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### *2.2.4 The Learners*

According to observations the pupils seemed to be very happy and motivated in their school environment. All of the pupils were wearing school uniform (provided free by the government), and the majority looked clean and healthy (note pupils response to characteristic of a good teacher 'to be clean and wear nice clothes'). The majority of children come from very poor families and parents cannot afford to buy them exercise books or provide facilities for learning at home such as magazines, newspapers, a desk or lighting.

When pupils were asked why they go to school, they all agreed it was *'to learn!'*. When asked to give more specific reasons, the list in Table 7 was generated. The reply '*if I don't go to school I can't go anywhere because I can't read the bus stop sign'* was mentioned a number of times; few if any of the pupils have ever been on a bus. The reasons pupils give for not going to school appear to focus around parents keeping children at home, especially during peak times in the agricultural year, such as during rice harvest (Table 7). Concerning what pupils like and dislike about school, it is interesting that 'the garden' is mentioned on both sides. Other activities (Table 9) indicate that visual aspects of the school, especially in terms of plants and flowers, are important to the pupils. Pupils say that what they learn about agriculture at home is different from what they learn in the school plot (photo 3). At school they learnt to make compost and learn that it is important for plants to grow strong and healthy.

**Photo 3:** Experimental agriculture plot

Pupils from year 4 all said they would like to continue with their education. When they finish primary school, their aspirations are to be in professional occupations such as a teacher, a policeman, doctor and priest. Year 5 pupils gave a similar response, except one girl who said she wanted to leave school and become a *'good farmer'*; this girl is very bright and is expected to pass the year 5 scholarship exam.

**Table 7:** Why do some children go to school and others don't? (School A)

| *Why do children go to school?* | *Why do some children not go to school?* |
|---|---|
| • to learn<br>• to be a good farmer, teacher or nurse<br>• to learn subjects - maths and environment<br>• to learn letters<br>• to learn right from wrong<br>• *if I don't go to school I can't go anywhere because I can't read the bus stop sign'*<br>• to learn to work - *'if I don't go to school I won't know how to weed, how to make compost and how to cook'*<br>• to play<br>• to learn songs and dancing | • not good at school<br>• have to stay at home to work on the farm<br>• when they are sick<br>• don't like to go to school<br>• not interested in learning<br>• *'when my parents go to the fields I must stay at home to look after the house or cattle'*<br>• have to stay at home to look after their younger brothers and sisters |

**Table 8:** What children like and dislike about school (School A)

| *What do you like about school?* | *What do you dislike about school?* |
|---|---|
| • the teachers<br>• learning will help us in the future<br>• to be given homework<br>• to play and learn<br>• working in the school garden because we want to learn about the garden | • don't like the big classroom<br>• the garden is not pretty<br>• being bullied and beaten by older pupils |

### *Pupils activities at home and school*

Mapping diagrams (figure 2) were used to find out what pupils did at home, what they did in school and whether they were able to link the two learning environments (Photo 4). The diagrams revealed a number of interesting points and were used to substantiate responses to questions as well as to generate further questions about the learning environments of the pupils. Diagrams were extremely expressive and detailed and gave a clear outline to the type of activities pupils are involved in. The most common task at home for boys and girls was collecting water. Agricultural activities and going to the toilet were also mentioned frequently by both boys and girls. At school, again, fetching water was a common activity, along with working in the experimental agriculture plot. It was very interesting to note that some of pupils put going to the toilet, and collecting green leaves as daily activities. This may be due to the nutrition programme, introduced by an external donor, in which children were taught the importance of sanitary health, especially using a toilet (43% of families have no latrine), and the importance of a balance diet, especially eating green vegetables. Both of these practices were illustrated in the mapping diagrams.

**Photo 4:** Pupils' mapping activity

Another interesting activity which came out in the mapping diagrams was the prominence of the flower garden. On visits to the school there were only a few flowers to be seen; previously there had been a flower border near the entrance to the school, but it was removed to enable lorries into the school grounds. The pupils liked the flowers, which were also a natural vector crop in deterring pests on the experimental plot. When it came to linking the two learning environments, pupils were unable to go beyond physical linkages such as *'I take manure from home to school and take seeds from school to home'* and *'I take green leafy vegetables to school'* (2 pupils). One girl has her own plot at home and in her mapping diagram she linked different types of plants in the agricultural experimental plot to her plot at home.

**Figure 2:** A pupil's mapping diagram - school A

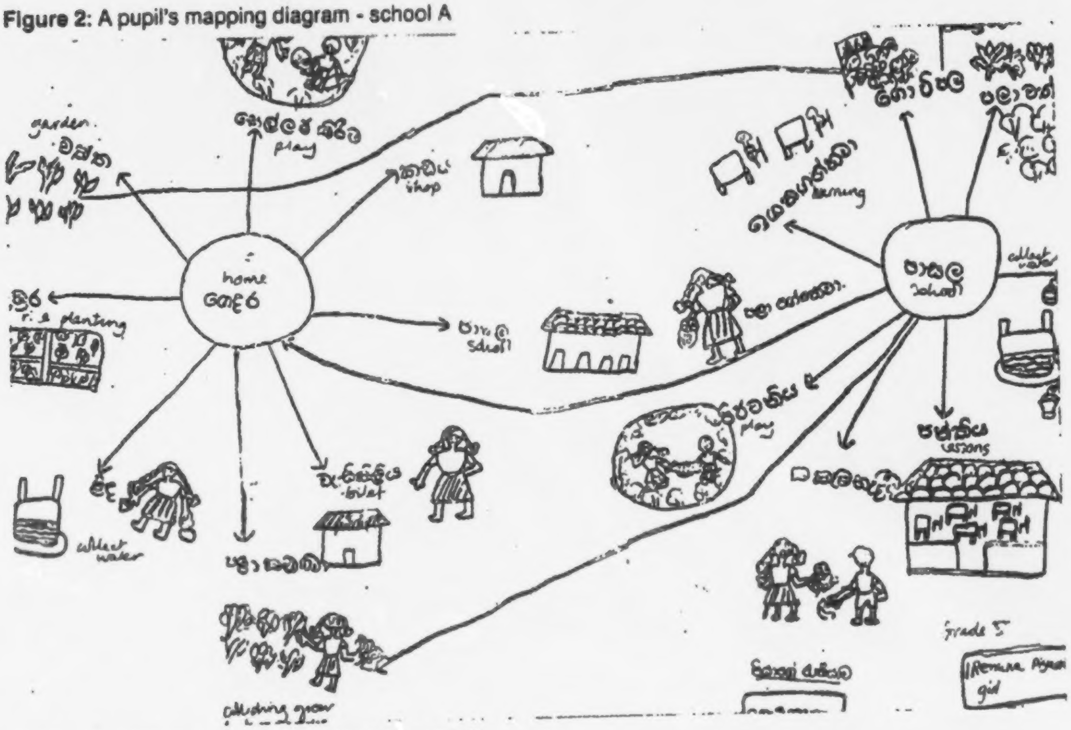
garden
play
shop
home
school
rice planting
collect water
toilet
learning
school
collect water
play
lessons
Grade 5

**Table 9:** Activities at home and school (School A)

(Summary of mapping diagrams by 12 pupils from year 4 and 5 (by frequency of occurrence of each activity in the mapping diagrams).

| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
|---|---|---|---|---|---|
| prepare flower nursery | 1 |  | dig experimental plot | 1 |  |
| work in home garden |  | 2 | play | 3 | 3 |
| fetch water | 5 | 5 | fetch water | 4 | 2 |
| pray |  |  | cook | 3 | 4 |
| private tuition class | 1 |  | work in experimental plot | 5 | 5 |
| go to reservoir (bathing) | 1 |  | go to toilet | 1 | 1 |
| wash face | 1 |  | collect firewood | 2 |  |
| play | 3 | 3 | pick flowers | 2 |  |
| sweep garden or house |  |  | sweep school grounds | 1 |  |
| work in house |  | 1 | work in flower nursery | 1 |  |
| herd cattle | 1 |  | learn |  | 3 |
| weed | 2 | 1 | water plants |  | 1 |
| let chickens out | 1 |  |  |  |  |
| eat at home | 1 |  |  |  |  |
| go to shops | 2 | 4 |  |  |  |
| collect firewood | 1 | 1 |  |  |  |
| go to medical centre |  | 1 |  |  |  |
| work in (rice) fields | 3 | 2 |  |  |  |
| work in chena | 1 | 3 |  |  |  |
| collect green vegetables | 1 | 3 |  |  |  |
| bird scaring in paddy field | 3 |  |  |  |  |
| wash clothes | 1 | 1 |  |  |  |
| go to toilet | 3 | 2 |  |  |  |
| eat | 1 |  |  |  |  |
| go to hospital | 1 | 1 |  |  |  |
| pick flowers | 1 |  |  |  |  |
| cook | 1 |  |  |  |  |
| dig in paddy fields | 1 | 3 |  |  |  |
| pick vegetables |  | 2 |  |  |  |

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The pupils all said that they thought learning in school was easy; however, on asking which were their favourite and least favourite subjects, mother tongue (Sinhala) was a favourite because *'it is a subject we already know'*. Maths and English were least favourites because *'they are difficult'*. Subjects pupils believed to be of most use to them in the future included religion (boy who wants to be a priest); English (*'because it is good to speak another language'*); and environment (*'because it is beautiful to learn about!'*). Year 5 gave similar responses to year 4 - English, maths, religion and Sinhalese. The subject areas they least liked included science, English and environmental studies; the latter two they said were *'too difficult'*. When asked if learning in school was difficult in general there was a general consensus (year 5 pupils) that it is all easy, *'except English!' and*, without thinking they said that *'it is not easier to learn things at home'*. However, Year 4 pupils said *'in school it is easier to learn things because we have text books. We do not have books at home so we cannot stay at home and learn'*. The question was intended to discover whether pupils learnt new things at home; however, it was misinterpreted as learning from textbooks at home. On further questioning, pupils came up with the following about relationships between learning at home and school: *'working in the school experimental plot is similar to work at home. We learn more at school because at home parents only allow us to do simple tasks such as sweeping or weeding. At school we do more, such as making compost and measuring plots'*. The pupils emphasised that they have gone home and told their parents what they have been doing in the agriculture plot at school. Following this a few parents had been down to the school to have a look at composting in the agriculture plot, and were now trying the practice on their farms. Year 5 pupils also mentioned the use of vegetables at home in cooking and the use of the same vegetables at school in the nutrition programme.

### *2.2.5 Teaching Learning Processes*

#### *The curriculum and content of learning*

The curriculum is rigid with a heavy work load and allows for no extra curricular activities during school time. Pupils have no choice over what they learn in class, because the teachers believe the curriculum does not allow them any flexibility over what is taught and how it is taught. Lesson plans are arranged at the beginning of the year and cannot be altered. Due to the school's involvement in a donor project, the principal has made allowances in the timetable to accommodate the extra activities (e.g. cooking and agriculture programmes). The principal values these activities highly and consequently he has ensured that they are incorporated into the timetable. Years 4 and 5 have ten periods each week for environmental education. Two of these have been allocated to activities using the experimental agriculture plot. Higher years do not have environmental education as a subject, so their activities involving the use of the experimental plot take place when teachers are absent, or when the pupils have free time. They are set projects or exercises and the work is not supervised. The cooking activities have been incorporated into the standard curriculum by sending groups of pupils out of their normal lessons for fifteen minute periods.

The school has no input in curriculum development and the teachers felt that the curriculum is generally not relevant to the lives and backgrounds of the pupils they teach. Through bringing in the nutrition and experimental agriculture plot, teaching methods have improved, as these extra activities have made learning more relevant to the backgrounds of the pupils. Teachers said that they try and make a topic relevant through using local examples and experiences in their teaching methods if the textbook does not give a relevant example. As one teacher stated: *'textbooks need changing, they should be more flexible so that they can be made relevant to the child's environment.* A case was stated about a textbook in which there is a problem to solve about speed. *It (the textbook) uses buses and trains in Colombo as the problem example. The majority of rural school children have never seen a train, never been on a bus and never been to Colombo'*. During visits to the school it was noticeable that children frequently draw and sing about flowers; they name carnations and roses as pretty flowers. However, few of these children have ever seen these types of flowers and there are only a few flowers at the schools and in the surrounding area.

#### *Teaching learning practices in the school*

During the interviews held with pupils at the school, the year 5 pupils were not as open and forthcoming with ideas and suggestions as the year 4 pupils. Replies to various questions from year 4 pupils were more informative and varied compared to the replies given by year 5 pupils. A possible reason for this is that the year 5 pupils had recently taken the scholarship exam (August) and prior to this were involved in a strict programme of rote learning. If a pupil gets a scholarship to a type 1AB school, it is a great credit for the primary school.

Pupils are encouraged to work in groups, especially for project work. Nutrition classes are held in groups. Years 1, 2 and 3 work in groups most of the time, though lack of space prevents them working in groups all of the time. Fortnightly pupils group together by class (years 1,2 and 3; years 4 and 5, years 6-9) and conduct their own meetings where they can sing, speak, act etc. They also take their own minutes, so as well as being entertaining and enjoyable, it is also a language exercise. Project work appears to be important in the school, illustrated in a book produced by year 5 pupils for some maths work on drawing graphs. They had carried out a survey in the school on various topics, such as what is your favourite flower, favourite animal, parents occupation. Each pupil had drawn a graph on the responses to a question. The pupils, as a group, then had to grade each others work and the best graphs were put at the front of the book. Other examples of project work included finding the English name of a tree, making a name board and fixing it to the tree for English. In Science, make different types of compost and testing the effects the types have on the growth of plants.

Pupils say they discuss their school work with each other when they are doing practical activities (mainly on the agriculture plot); they also mention that they ask the teacher questions both in the classroom and outside. At home they can talk to their parents (usually their mother) about school work when it relates to agriculture (many of the parents are illiterate and agriculture is the subject they are most familiar with). One pupil said *'my parents like me talking about practical activities, such as cooking, that they know about; they will not discuss a maths class'*. Pupils say that they only ask questions during practical classes such as cooking. Parents cannot, and do not have time, to help pupils with school work, though brothers and sisters may help them. Compared to other schools in the area, there is a great demand to go to this school, not just from pupils and parents, but recently teachers from other local schools have asked for transfers. The school is a common topic amongst the villagers and is well known for its innovation practices throughout the area. Even though the exam marks are not high, the motivation of teachers and pupils is extremely high.

**Table 10:** Methods of Learning Matrix Ranking Activity (School A)

| Rank | Teachers' response (group 1) |
|---|---|
| 1 | pupils doing practical activities |
| 2 | teacher giving examples |
| 2 | pupils asking questions |
| 3 | teacher talking or reading to pupils |
| 3 | pupils helping each other |
| 3 | pupils singing or reciting |
| 4 | pupils talking about their own experience |
| 5 | pupils writing about their own experience |
| 6 | teacher asking questions |
| * | teacher beating pupils |

| Rank | Teachers' response (Group 2) |
|---|---|
| 1 | pupils doing practical activities |
| 2 | pupils asking questions |
| 2 | pupils talking about their own experience |
| 3 | pupils writing about their own experience |
| 4 | teacher asking questions |
| 4 | teacher giving examples |
| 5 | pupils singing or reciting |
| 6 | teacher talking or reading to pupils |
| 7 | pupils helping each other |
| * | teacher beating pupils |

| Rank | Pupils' response (year 5) |
|---|---|
| 1 | pupils doing practical activities |
| 2 | teacher giving examples |
| 2 | pupils talking about their own experience |
| 3 | pupils writing about their own experience |
| 4 | pupils asking questions |
| 4 | teacher talking or reading to pupils |
| 5 | pupils singing or reciting |
| 5 | teacher asking questions |
| 5 | pupils helping each other |
| * | teacher beating pupils |

| Rank | Pupils' response (Year 4) |
|---|---|
| 1 | pupils doing practical activities |
| 2 | teacher giving examples |
| 3 | pupils writing about their own experience |
| 4 | pupils talking about their own experience |
| 5 | pupils asking questions |
| 5 | teacher asking questions |
| 6 | pupils singing or reciting |
| 6 | teacher talking or reading to pupils |
| 7 | pupils helping each other |
| * | teacher beating pupils |

*rank score = 0

In the matrix ranking activity 'pupils doing practical activities' was ranked most highly by both groups of teachers and pupils. In the school, practical activities are frequently undertaken in the agriculture plot and the school kitchen, and teaching and learning, through the use of these activities, was frequently mentioned as a motivating and enjoyable factor in the school by both pupils and teachers. Teacher giving examples is ranked highly again by pupils and teachers. Teachers say that generally pupils are shy to ask questions and this is evident in their rankings. The teachers rank this method highly and earlier in interviews said that *'it is a weakness in the school'* and that they are now encouraging the year 1 pupils to ask questions. In both groups of pupils they rank 'pupils talking or writing about their experiences' highly and above the 'teacher talking or reading to pupils'. It was noticed during observations that pupils are encouraged to speak out in class. They also have a session once a week where pupils present a speech, or song or what ever they wish to all the other pupils. 'Pupils helping each other' is ranked low by pupils and highly by teachers. A possible reason could be that in class pupils cannot discuss work with each other because lack of classroom divisions makes it too noisy if they start talking.

### 2.2.6 The Home Environment

The principal and staff try as much as possible to get parents involved in the school, but generally they only come into the school when asked. They also provide the children with the raw ingredients for school cooking activities. When the cooking activities first started, parents used to come and help. However the principal had to stop them helping as he felt they were too dirty and he could not tell them this. Through teaching the children hygienic practices, he felt this may be extended to the parents. The recipe cards that the children follow, which include instructions for hygienic practices, are posted on the wall by the kitchen. Parents do look at the cards but few are literate, therefore learning through their children appears to be a more effective method; the teachers feel it is difficult to change the parents attitudes and the only way of doing this is through the pupils. The school holds parents meetings once a month, but on average only 30% of the parents attend. Some of the teachers made house to house visits in an attempt to get more parents to attend, but attendance only increased by about 5%. Methods of enticing community members and parents to the school include holding a show of pupils performances (singing, drama, reciting) and a sports day. For the latter each pupil was asked to contribute Rs. 25 each. Asking for money from the pupils discourages parents from coming to the school. The school now asks for gifts rather than money after one case in which a parent refused to give Rs. 25 in cash, but instead donated a bunch of bananas worth Rs.150.

### Parents' role in schooling

Four parents (three men and one women) were interviewed. All are farmers and have children at the school. These parents say that they always come to the school if they receive a message through their children. They like to get involved with the school and have helped repair buildings and plough the school experimental plot. Getting involved in the school is very important, as the school needs to be improved further. Therefore they must keep the school to provide better lives for their children. They say they are quite satisfied with the school, but don't know what their children should be taught, except reading and writing, as they never went to school themselves; they believe that hardship and problems in the village are caused by low literacy rates amongst adults.

Their children talk about what they do in school, especially cooking and agriculture, because they know that this will form a discussion. The parents say they do ask their children what they learn in school, but that they don't have much time to listen. Often they do not know what the children are talking about, but they ask anyway to encourage them. One parent said *'it is good when they talk about cooking or agriculture because we can relate to these activities and learn from our children'.* The parents say that the new programme at the school has helped them to have friendly discussions with their children at home and has improved family bonds. The children now ask them more questions. From their children, the parents have learnt new agricultural practices, as one father quoted *'when planting a banana tree, I dug a small hole put the plant in and pushed some soil, using my feet, around the base of the plant. My son was watching and said to me "when you plant a banana tree you must dig a hole 2'x2', then put the plant in and replace the soil" - now my banana trees grow better'.* Another farmer has started making compost after his daughter told him about it and he had been down to the school to find out more.

Everyone in the village knows each other, so talking about home life in school is not a problem. One mother said that the children always go to each others houses and they all know about each other. The parents say they do not want their children to end up in the same position as them. They do not want them to be backward. They want them to be knowledgeable about the outside world and have the opportunity for a high level of education. They feel that there should be some sort of programme in the village to accommodate 'drop-outs', who at present tend to stay at home and help on the farm.

### 2.2.7 Contextualising teaching and learning

The principal believes that if the school is an enjoyable learning environment, pupils will attend the school. Pupils in this school enjoy and look forward to practical activities and project work. Through the introduction of these types of learning activities, the school environment has become more conducive to learning. Teachers in the school use a number of teaching methods which relate directly to pupils' experiences, and the benefits of this approach include:

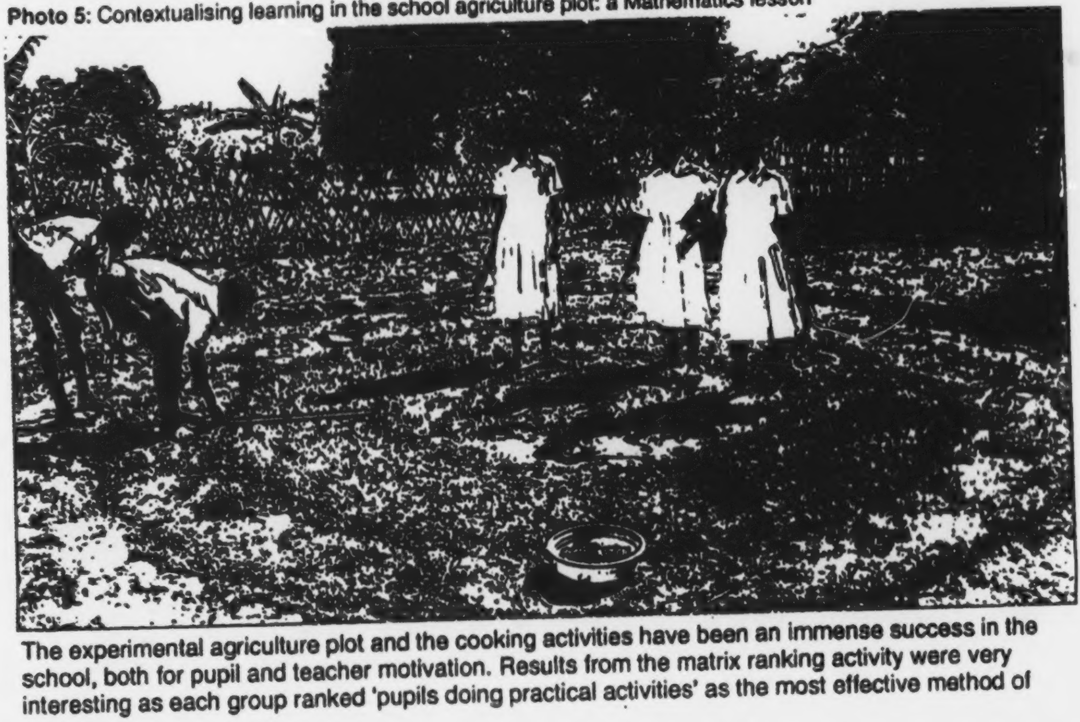
- the pupils enjoy project work as all pupils can participate and work together;
- pupils are more attentive to this type of work;
- pupils have more self-motivation and are happier;
- with project work you can see immediate results;
- pupils are more enthusiastic and will put in extra work;
- pupils learn from each other

Some further examples were given by teachers, which draw on the pupils' experiences in learning new concepts. One teacher was giving a lesson on measuring volumes of liquid. He was using a bottle that held a litre, to illustrate to pupils how much one litre was. After the lesson, pupils went into the village and discovered that a local trader was selling 1 litre of kerosene in a 750 ml bottle. The pupils went to the teacher to ask him to confirm their finding after which they told the trader that the bottles were not one litre. In some cases, when learning about modern transport, it is difficult to explain to the pupils, as most of them only know about ox carts. The agriculture experimental plot and the nutrition classes are frequently used tools to relate lesson content to pupils' experiences. Games have been developed for teaching concepts such as time, speed and distance.

### 2.2.8 Agriculture in contextualising teaching and learning

The teachers say that they try to integrate subjects as much as possible. Where text books are used (for Maths, Sinhala, Tamil and English) the subjects are not integrated. One teacher stated that *'Maths should be taught as a separate subject because concept development is difficult when integrated'*. The experimental agriculture plot is an excellent example of teaching Maths concepts in the context of agriculture. On one visit to the school a group of pupils (year 7), whose teacher was absent, had been set the task of 'drawing' circles in the school plot, using a piece of rope and a stake for a pair of compasses (Photo 5). They were then going to plant vegetables in the circles.

**Photo 5:** Contextualising learning in the school agriculture plot: a Mathematics lesson



The experimental agriculture plot and the cooking activities have been an immense success in the school, both for pupil and teacher motivation. Results from the matrix ranking activity were very interesting as each group ranked 'pupils doing practical activities' as the most effective method of learning. Evidence from the group interviews held with pupils shows that this is what they enjoy most and feel is very important in their learning process, especially where the activity is relevant to their home environment. Through carrying out practical activities in the experimental plot, which has been used as a base for teaching other subjects such as learning Maths concepts or reading English, there have been improvements in farmers' agricultural practices. Pupils have passed on their experiences in the agricultural plot to their parents, hence some parents have become more aware of major issues such as soil erosion and other environmental problems. Consequently the introduction of the plot has produced a type of extension system and a three way learning triangle between parents, pupils, teachers and the community. Since using the experimental plot, pupils' curiosity and questioning has increased. There is a very low uptake of technology in agriculture in this region, and pupils have been asking such questions as *'how do we increase the yield of this crop?'*, *'what new technologies can we use?'*. There is now an increased awareness in the community of the need to improve agricultural practices. One specific practice employed at the school that is now starting to diffuse into the community, is composting.

The main problem with using a practically based approach to learning is time. Lessons are only 40 minutes long and this is a major constraint. Practical sessions that involve group work are important because they can involve all pupils and pupils' motivation levels are increased. Teachers feel that this approach, which relates the content to the pupils' experience, is suitable for all pupils because the majority come from the same type of background with the same type of experiences and problems. Another constraint to using this approach is the lack of materials; pens and paper (pupils erase what is in their exercise book when it is full). The teachers have regular meetings to discuss problems and develop new ideas. There is no teacher of agriculture at the school; however, there is a master teacher specifically for agriculture in the area and the principal has recently asked her to come to the school.

### *2.2.9 Issues arising from school A*

Although the school has received a substantial amount of funding and support from a donor project, it still faces a number of serious problems, especially in the supply of materials. The government is meant to supply such items as blackboards, but they never reach the school. Because the school at present has donor support, the district education office neglects to supply the school with materials it should receive from the government. The school is noticeably innovative compared to the other schools visited. The principal could immediately identify factors which he believes makes his school innovative; for example, project work is important; project work and practical activities are continually assessed and added to the pupils' end of year mark; pupils learn from each other; pupils are encouraged to work in groups; allowances are made in the timetable to accommodate extra activities; and teachers try to integrate subjects as much as possible.

There are a number of physical resource problems in the school that directly affect classroom learning, such as insufficient classroom space and no partitions between the classroom areas. There are few teaching and learning materials, especially teaching aids, exercise books, and extra reading material, all of which are necessary to motivate staff and pupils. There is no funding available for educational visits ( to develop social and awareness skills, visits to efficient farms) and no proper assistance for talented pupils or those requiring special needs. Teachers are very motivated in this school and much of this can be attributed to the dynamism of the principal. The outside influence of the donor project has also helped in raising the image and improving conditions in the school. The teachers are young and relatively well qualified and there is good teacher collegiality; again it is most probable that the principal plays a large part in ensuring his staff work together well. There are fortnightly staff meetings, teachers share responsibilities and are very trustworthy.

Teachers face problems with the curriculum, mainly that they have no input in curriculum development; the work load of the curriculum is too heavy to allow them to have any flexibility in what is taught and how it is taught; the curriculum is generally not relevant to the lives and backgrounds of the pupils; textbooks are 'urbanised' and appear to neglect the rural learner; in order to carry out practically based lessons a 40 minute lesson period is too short; and, exams set at district level are unfair. Teachers would like also to see improvements in teacher training. They would like more opportunities to attend training especially in different teaching methods, such as the use of games; in classroom organisation, specifically how to organise teaching and learning in a limited area with few resources; in materials development; and specific training in physical education, music and drama.

There appear to be good community-school relationships, and teachers are well respected in the village. The principal and some of the teachers live in the village, so they understand and know the backgrounds pupils come from. This enables them to be more understanding to pupils' specific problems. Understanding the community and a specific family's problem will make it easier for the staff, who will know how to ask parents about things that are happening at home. Teachers try to accommodate and help pupils if they must be absent to help at home, rather than continually blaming the parents. The major problem in the village is poverty and many children are malnourished; few children come to school having eaten anything for breakfast other than hot tea. At peak times in the agricultural year children must stay at home to help in farm work. Teachers believe low literacy rates of parents is likely to cause disinterest in their children's' schooling. There are few facilities in the home for learning: no reading materials, no writing materials and little lighting mainly because parents cannot afford to purchase them and the school cannot afford to lend pupils books.

Learners in the school appear to be happy; they tackled activities, especially mapping diagrams, with enthusiasm and their diagrams were colourful and detailed. They are able to relate and use what they learn at school at home, especially when it relates to the school plot and the cooking activity. Overall they say that learning in school is enjoyable. It appears that the subjects they enjoy are the ones they already know, mother tongue (Sinhala) is a favourite subject because *'it is a subject we already know'*. Maths and English were least favourites because *'they are difficult'*. The school experimental agriculture plot and the nutrition programme are seen as a means of getting parents involved and interested in their children's education. Now children talk at home about cooking and agriculture in school because they know that this will form a discussion as parents can relate to these activities. Parents say they do not have much time to listen to their children because of their demanding workloads, and they often spend many hours working in the fields away from the home. Parents say that the new programme at the school has helped improve family bonds and that now they have more meaningful discussions with their children at home. Parents also learn new agricultural practices, and better hygiene practices from their children. This is very important in an area where the farmers receive little help from government extension workers.

## 2.3 An 'average' school - School B

### 2.3.1 The Community Environment

School B is in a small village barely 40 km from Colombo. It lies within Horana Secretarial Division in Western Sri Lanka. The village lies amongst six other similar villages, all within the catchment area of the school. Each village has between thirty and forty families, with an average of five persons in each family. Average monthly incomes were estimated in verbal interviews with parents to be Rs. 400 per month plus Rs. 500 from *samurdhi* programme, but incomes are very insecure. The principal of the school, estimated the average family income to be around Rs. 2500 - Rs. 3000 per month. The majority (60%) of families receive support under the *samurdhi* programme. The village is Sinhalese Buddhist and Sinhala is the spoken language. There is an evident segregation in castes within this village. The literacy rate in the village is high, at approximately 98%.

Over 90% of the community is engaged in some form of agriculture, although many have extra income sources due to the low income received from farming. Few have jobs that take them outside the village and unemployment in the village is around 20%, even of educated school leavers. There are many social problems in the village, especially drug and alcohol abuse and adults working overseas. A percentage (approximately 40%) of pupils at the school are looked after by grandparents, older brothers and sisters, or fathers, because the mothers are working in the Middle East and Singapore. The majority of houses have latrines and all have access to well water but few have electricity. None of the parents interviewed (all farmers) mentioned any type of forward planning or future vision. They all appear to live from day to day and are heavily reliant on the *samurdhi* programme for extra income.

#### Agriculture

The majority of farmers have a small area near the house that is a home garden. Many of the farmers rent land, usually about two acres, on which to farm. Approximately one quarter of the income may go on land rent. This area was previously a paddy farming region, but high input costs and low market prices have caused most of the farmers to move over to vegetable production. Vegetables also provide a steady income throughout the year. The market for the produce is good, but poor infrastructure prevents the farmers from marketing their own produce. There are no farmer groups or marketing organisations in the area, so farmers have little choice but to sell to a middleman who collects the produce direct from the farm. The middleman may only pay the farmer half the retail market price of the produce. There is no support from agricultural extension agents. At present they have problems with pests and disease on the vegetables. Peak periods in the agricultural year are April and October (paddy land preparation and planting), and February and August (paddy harvesting). During these times the parents may keep their children at home to help in the fields. Most of the parents said that the reason for poor incomes from farming is the high cost of inputs. They all say they have sufficient knowledge (gained through experience) to farm.

### *School and Community Relations*

The school lends furniture, free of charge, to the community for special occasions such as weddings and funerals. The community provided some materials for prize giving (the first one was held in 1995) and occasionally help with the maintenance and cleaning of the school. Carpenters in the village had been asked to help repair furniture at the school, but they never turned up. Empty rooms at the school are hired out for self employment programmes and money obtained through this has enabled electricity to be connected and a night-watchman employed (there is a problem with theft and vandalism at the school). Many of the parents are past pupils of the school who tend to give donations to the school rather than get involved in school activities. The principal believes that understanding the community and better links between the school and community will help overcome the pupils' learning problems; however, there was no evidence to suggest any effort was being made to involve the community in the school activities. Teachers attend community functions such as festivals, and if the teachers are asked for money or voluntary help by the community members, they always help if they can. This is never reciprocated by the community when teachers ask for help at the school.

**Photo 6: the school**

### *2.3.2 The School Environment*

The school was built in 1902. It is a type 2 school with classes from years 1 to 11. The school site covers 3.5 acres and there is no agriculture plot. There are a few flower beds, but generally the school grounds are bare and unattractive (see pupils' responses, Table 13). There are three large buildings (50 x 9 metres) and two smaller buildings (35 x 8 metres) of the type illustrated in Photo 6. At present one of the large buildings is being re-roofed, but there appeared to be adequate space for all of the classes, although years 2 and 3 have small rooms. Only one of the large buildings can be completely locked (metal wire on the sides, Photo 7), the others are completely open; therefore, work, books etc., cannot be left in them. The school is well equipped with plenty of desks and chairs, although a large number are in disrepair. The principal's office contains a number of secure metal cabinets. There is a large school library in which books are kept in locked cupboards. At present the library is being used as a staff room.

There is one latrine for girls and no provision for boys. A well was provided by the parents, but this dries up during the dry season. The parents mentioned that the quality of the water is very poor, so they must provide their children with drinking water to take to school. It is interesting that the principal has recently had electricity connected to the school and has employed a night-watchman, yet there are no adequate sanitary and water facilities. The principal said that electricity is needed for using equipment in the science laboratory, and he also mentioned that previously pupils had brought electric cookers to the school to make cakes. This is hard to believe, considering the poverty that is prevalent in the village. It seems that the electricity supply is not, as yet, fully utilised.

**Photo 7:** classroom of year 1 pupils

#### *Enrolment, Pupil Numbers, Attendance, Drop-out and Repetition*

There are 291 pupils enrolled in the school (124 boys and 167 girls). The average attendance rate is low at only 65%. The principal stated that he does not consider the low attendance rate to be a problem. He continued, *'if the pupils do not want to attend school that is their problem, we will concentrate on getting the good pupils through their exams'*. There was no available figure for drop-out, but reasons are given as major social problems in the village, poverty, broken families and mothers working abroad. Self-motivation of pupils in the school is low which, according to the principal, can be attributed to the many social problems children face at home. About 10% of the pupils drop out and become child labourers (see Table 12) whilst another 30% tolerate the problems at home, but lack of family support demotivates them.

#### *Assessment and Examinations*

The principal does not agree with the present exam system. He believes that the school should have more control over the system because pupils from rural school have different backgrounds to those from urban schools. The exam system needs to accommodate the differences in the background and experiences of rural children compared to urban children.

### *2.3.3 The Teacher*

There are sixteen teachers (two male and fourteen female) for 291 pupils (124 boys, 167 girls) which equates to a low pupil:teacher ratio of 18:1 as compared to a national average of 23:1 in type 2 schools (NIE, 1993). There are numerous problems in this school and, according to observation, one appears to be poor relationships between the teachers and the principal. Teacher motivation appears low, which is not helped by the school only having had one inspection in the last four years and rare visits by the Master teachers. The principal said there were a number of problems at the school including the fact that teachers are taking too much leave. Although teachers are entitled to forty days' leave a year, the majority (87%) of teachers are female and they tend to take all of their leave because of family responsibilities. The principal then said he would like more male teachers in the school because they *'do not have responsibilities at home and would get involved in extra-curricula activities, such as teaching cricket'*. The principal also complained of a general lack of trained primary education teachers and a general decline in the standard of teachers. One teacher said that she wanted to teach primary level (Maths) because *'I find it very difficult to teach pupils at secondary level that have been taught incorrectly at primary level*). Altogether the principal is not happy with the overall performance of the school, he attributes this to the decline in parents' and pupils' social and moral values.

The teachers gave a comprehensive list of the problems they face in this school. Major problems include dealing with children from disturbed backgrounds; lack of parental involvement in the school; and, lack of parental support at home (*'they don't make the children do homework'*). These problems in turn lead to low motivation and absenteeism of pupils. During the interviews one teacher made the comment *'until we improve children's motivation, it is not worth doing anything else'*, she gave no suggestions as to how motivation could be improved. Other related problems include poverty, health (congenital diseases, bad teeth and eyes) and poor nutrition (children frequently faint from lack of food and water). Teachers complained of no permanent staff room, small classrooms, broken furniture that is never mended and, in terms of resources, a lack of materials as children don't bring exercise books and pens to school. Getting new teachers is also a problem as the school is not easily accessed by public transport (teachers must walk 3 km to the nearest bus route).

The attitude of some teachers in the school appears to be that if the pupils don't come to school it is because they don't want to come to school. Consequently some teachers stated that they concentrate on the better pupils and neglect those that attend infrequently and are slow learners. When the teachers were asked whether it would be possible and useful to give pupils self-learning materials to use at home, that could be based on the child's work at home, one teacher replied, *'children who stay at home, don't want to come to school; self-learning materials are not appropriate. Children who want to come to school do so anyway, even if their parents tell them to stay at home'*. The main assistance the teachers would like, apart from training, are: diagnosis of children's problems and special needs education to support these children; awareness programmes for parents to support and motivate their children; seeing a model school; use of the media, such as television and radio, in teaching and learning; and provision for school visits so that pupils have the opportunity to gain practical experience about what is around them (although the school is only 12 km from the sea, most pupils have never seen it).

Of the eight teachers interviewed, all had formal training and seven of them were over thirty five years old. Three teachers had more than twenty years' teaching experience, with the rest having between four and seventeen years' experience. Length of service in the school ranged between one and sixteen years, the latter being for the deputy principal and teacher of year 1. All of the teachers are experienced and consequently they made few comments about the need for further support in training. The teachers of the higher grades felt their training was adequate and most said they had attended recent INSET courses, though primarily because of changes in the curriculum. At the primary level they need more training. One comment was made about the quality of some INSET courses, *'it all depends on the trainer or Master teacher. The quality is usually all right but the courses were sometimes disorganised and not relevant to what I teach'*. If they had the opportunity to go for training now, teachers identified the following areas: integrating the curriculum using environmental themes; INSET in primary science (year 4 teacher) because she finds this area difficult; INSET course for year 4 and 5 and year 10 and 11 English; and training course in the use of practical activities in teaching mathematics for years 1 - 6.

### *What is a good teacher?*

Due to many of the children coming from disturbed backgrounds, the teachers are under pressure to provide sympathy and attention to these pupils (see comments in table 11). The principal believes teachers are motivated to care for and love the pupils, because they know it will be the only attention some of the pupils will get. One teacher said she gives special attention to pupils in her class with special learning needs (there are two children with learning disabilities for which there is no form of special education). From the pupils responses to 'what are the characteristics of a good teacher?', all pupils mentioned '*affection*' and '*paying attention to them*' as important characteristics.

### *2.3.4 The Learner*

All of the pupils interviewed have some sort of agricultural background. Some of their parents have other jobs as well as being farmers, for example one does building work and another makes wooden face masks. Three of the parents are involved in marketing agricultural produce (mainly vegetables) and one parent is a salesman for traditional medicines.

The subjects the pupils identified as the ones they liked the most were, Maths, *'because it is easy'*, *'because I get the highest mark in it'* (this boy only got 28/100). Religion and Environment *'because* *we like the teacher'*, Art *'because I draw well'* and Music *'because I sing well'*. Subjects they liked the least tended to be the ones they were not good at or didn't understand well, such as English and Science *'because they are difficult'*, Music *'because I can't sing'*. The subjects believed to be most useful in the future are, Maths *'so I can go into business'*, English, and Sinhala *'so I can read a bus timetable'*. All of the pupils said that generally, learning things in school was not difficult. However, at home learning things is easier *'because there is more time for someone to explain something they don't understand'*. None of the pupils could remember a time when the teacher asked about their home experiences. One pupil gave an example from a lesson in which they were growing seeds in pots in the classroom. He said that the teacher had never asked them how they grew seeds at home. Generally school work is only discussed at home if their parents ask, or something special has happened (such as the research visit). The overall impression we gained was that pupils feel their parents are not interested in their school work. A few pupils said their parents were interested because they send them to extra lessons (in preparation for the year 5 scholarship exam). All of the pupils want to continue their education, most at this stage looking towards professional occupations such as army, police, teacher, nurse and doctor.

Pupils responses to the question 'why do some children go to school and others don't?' (table 12) revealed some interesting information, which supported points raised by teachers such as the number of pupils who have mothers working abroad, one boy mentioned that *'one boy is working in a garage to earn money for his family. His father is an alcoholic and does not work'*, another said that, *'some work in the local market and village shops'*. Pupils responses to the reasons for going to school, were generally *'to learn'*, one girl said *'to communicate'*, *'if I didn't come to school I wouldn't have been able to ask the foreigner questions'* (because the pupil would not know English).

Pupils were slow to say what they liked, or disliked, about school. Their responses (Table 13) were of a general nature and mainly concerned with the appearance of the school *'I like the colour and smell of flowers and they attract butterflies'*. Due to poverty few pupils have any facilities for learning at home, therefore books and good facilities would probably be a motivating factor for attending school.

**Table 11**: What are the characteristics of a good teacher? (School B)

| *Pupils' response* | *Teachers' response* |
|---|---|
| *A teacher should:*<br>· be strict<br>· teach well<br>· be kind<br>· explain things well<br>· beat them if they are not listening<br>· not be absent<br>· should give orders and check that they have done the right thing<br>· dress well and be clean<br>· talk about their home (one boy said his teacher came to his house when he was in year 1, they would like their teachers to visit their homes but they never do)<br>· love the pupils<br>· teach the pupil right from wrong<br>· correct their work and make marks in their books<br>· teach them songs and poems (though they also learn these from their parents)<br>· take them on trips - they learn by looking | *A teacher should:*<br>· look after the pupils needs<br>· be punctual<br>· love all the pupils<br>· pay attention to the pupils<br>· be a role model<br>· be duty conscious<br>· take less leave<br>· be a friend to the pupils<br>· dress well (the pupils hold a daily vote on which teacher is wearing the best sari, pupils like the teachers wearing saris because most of their mothers wear western clothes)<br>· show no favouritism<br>· committed to teaching |

**Table 12**: Why do some children go to school and others don't? (School B)

| *Why do children go to school?* | *Why do some children not go to school?* |
|---|---|
| · to learn subjects<br>· to play<br>· to communicate<br>· to make friends | · they are lazy<br>· they are sick<br>· they have to look after younger brothers and sisters because their mother is not at home.<br>· they have to earn money<br>· their mother works abroad<br>· their clothes are wet (only have one uniform).<br>· because they don't have money |

**Table 13**: What children like and dislike about school (School B)

| *What do you like about school?* | *What do you dislike about school?* |
|---|---|
| · Facilities to learn - furniture, text books<br>· The teachers | · appearance of the school, there are no flowers |

### *Pupils activities at home and school*

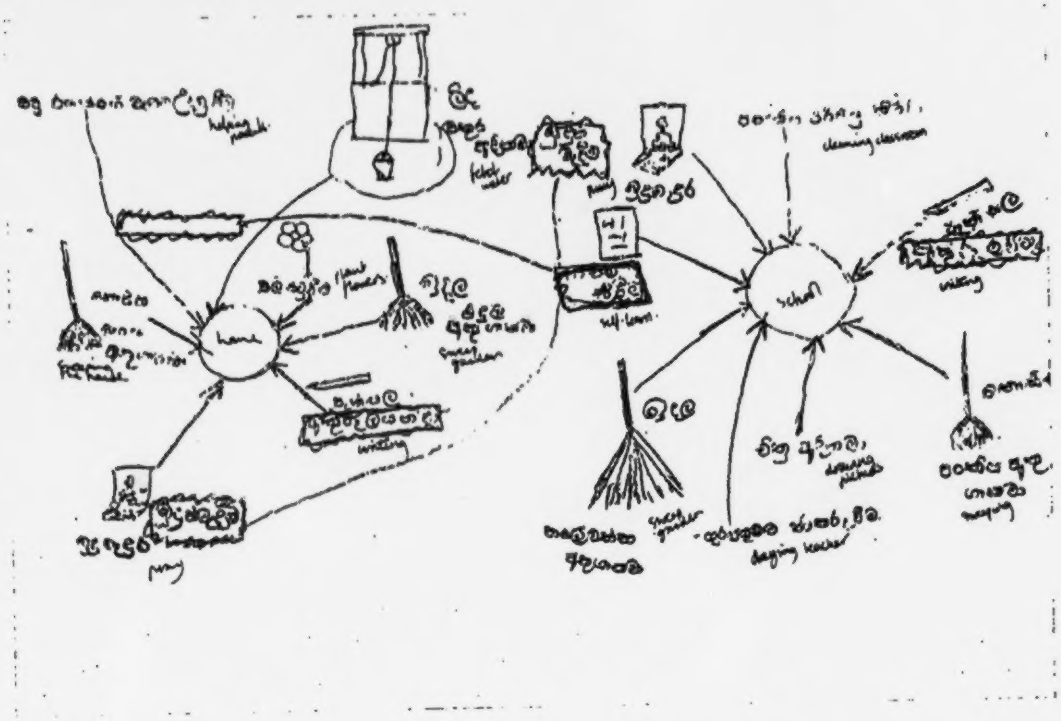
Praying was the most frequent activity illustrated by girls both at home and school and the only activity that pupils linked between the two learning environments; one pupil wrote that she learnt prayers in school that she used at home. Sweeping the classroom and the house was another activity mentioned frequently by girls. The girls also wrote 'obey the teachers' and 'obey parents' as activities. Although these pupils come from farming families, few of them appear to carry out regular work in agriculture. Girls mention 'planting flowers', maybe because it is an activity they enjoy (Table 13) rather than one they carry out frequently. A few boys mentioned agricultural activities (weeding, let chickens out), but the frequency of occurrence was more for 'sweep the house', 'play' and 'read books'.
Table 14 summarises mapping diagrams and one pupil's diagram is illustrated in Figure 3.

**Table 14**: Activities at home and school

(Summary of mapping diagrams by 12 pupils from year 4 and 5 (by frequency of occurrence of each activity in the mapping diagrams)

| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
|---|---|---|---|---|---|
| play | 3 | 4 | play | 3 | 3 |
| plant flowers | | 6 | learn | 3 | 6 |
| read books | 3 | 4 | plant flowers | | 3 |
| help parents | | 2 | obey teachers | | 4 |
| sweep the house | 4 | 7 | sweep classroom | 3 | 6 |
| clean the garden | 3 | 5 | clean garden | 2 | 5 |
| obey parents and adults | | 2 | pray | 3 | 7 |
| watch television | | 2 | collect water | 1 | 1 |
| listen to the radio | | 2 | tell stories and poems | 1 | |
| collect firewood | 1 | | draw pictures | | 1 |
| go shopping | 1 | | read books | | 1 |
| bring in the washing | 1 | | | | |
| collect water | 1 | 4 | | | |
| pray | 3 | 7 | | | |
| go to the temple | 1 | | | | |
| brush teeth | 3 | 1 | | | |
| wash face | 2 | | | | |
| comb hair | 1 | | | | |
| weed | 2 | 1 | | | |
| learn | | 1 | | | |
| water plants | 1 | | | | |
| let the chickens out | 1 | | | | |
| put vegetables into bundles | 1 | | | | |
| practice writing | | 1 | | | |
| eat | | 1 | | | |
| bathe | | 1 | | | |

Figure 3: A pupil's mapping diagram (School B)



### 2.3.5 Teaching Learning Processes

#### The curriculum and content of learning

The principal believes that the school would function better if more decision making was at the school level. For example the school terms could be made more suited to local conditions as during the monsoon flooding in the village keeps many pupils at home. The school has no input in curriculum development. Because the content of the curriculum is so full, the teachers do not have time to fit extra activities into school time; however, teachers believe the curriculum is relevant to pupils backgrounds. One example given in the curricula there is a section on factories in this area it is easy to go and visit a rubber processing factory. Few teachers could give examples or illustrate the use of other materials. Year 1 teacher had made some learning cards (numbers and letters) that she learnt at a recent INSET.

Pupils are given no choice over what they learn. There is a yearly plan with set lesson times and subjects, and this must be adhered to. Teachers follow the teachers' guide word for word and believe it allows for no flexibility. At this point it was mentioned that the teachers guide does allow flexibility in the lesson content and they were asked which they preferred, giving only a title such as "learning about soil by classification", or giving all activity steps like, (1) take the children to the garden; (2) ask them to collect soil samples; (3) let them sort out and differentiate soil types. All of the teachers said they would prefer to follow a set lesson, as in the teachers' guide, because they don't feel competent and confident enough to develop their own activities.

A very important point was brought up by one teacher who mentioned that in the curriculum there are many practical activities that can be done with the pupils. However, there are no follow-up lessons related to these activities. The activity suggests follow-up work but there is no time allocated in the curriculum to do them. They would have to be done in extra time, which is not possible because of the heavy content of the syllabus.

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***Teaching learning practices in the school***

The teachers say they integrate subjects where it is possible but textbooks do not allow for integration of subject areas; in Maths and Religion no integration takes place. Pupils rarely work in groups in the classroom, except for art and craft subjects. Project work is not undertaken because, said one teacher, *'the pupils are not clever so they need to pay more attention to lessons. Project work is not important'*. They do not do project work because it is not in the curriculum or the training programmes they have had.

Generally pupils only ask questions in class if they don't understand something; however, teachers say they normally ask questions first to ensure that pupils have understood, even though their rankings do not place this high as a method of learning (Table 15). Teachers say that pupils in the higher grades do not ask questions, because they are shy and have no confidence in themselves. It appears that the teachers make no attempt to encourage the pupils to ask questions, although year 5 pupils give this a relatively high rank (Table 15). Pupils are not encouraged to discuss in class unless they are working in groups and then only the better pupils work in groups, *'because the less able do not like working in groups and do not work well in groups'*.

'Pupils writing about their own experience' receives a relatively low rank by teachers and pupils. Teachers say that approximately 20% of year 4 pupils cannot write and 15% of year 10 pupils can neither read nor write to even a basic level of competency. Teachers place 'pupils doing practical activities' and 'pupils helping each other' as the best methods of learning. It is likely that this comes from their teacher training rather than what they actually practice in the school as year 5 pupils give both of these activities a low rank, and year 4 pupils give the former a low rank. Responses to other questions, by teachers and pupils, also indicated that few practical activities are carried out in the school.

**Table 15**: Methods of Learning matrix ranking activity

| Rank | Teachers' response (group 1) |
|---|---|
| 1 | pupils doing practical activities |
| 1 | pupils helping each other |
| 2 | pupils singing or reciting |
| 3 | pupils asking questions |
| 4 | pupils talking about their own experience |
| 5 | teacher giving examples |
| 6 | teacher asking questions |
| 6 | pupils writing about their own experience |
| 7 | teacher talking or reading to pupils |
| * | teacher beating pupils |

| Rank | Teachers' response (Group 2) |
|---|---|
| 1 | pupils doing practical activities |
| 2 | pupils helping each other |
| 2 | pupils talking about their own experience |
| 3 | pupils writing about their own experience |
| 3 | pupils singing or reciting |
| 4 | teacher giving examples |
| 5 | pupils asking questions |
| 6 | teacher asking questions |
| 7 | teacher talking or reading to pupils |
| * | teacher beating pupils |

| Rank | Pupils' response (year 5) |
|---|---|
| 1 | teacher talking or reading to pupils |
| 2 | pupils talking about their own experience |
| 3 | pupils writing about their own experience |
| 3 | pupils asking questions |
| 4 | teacher asking questions |
| 4 | teacher giving examples |
| 5 | pupils doing practical activities |
| 6 | pupils singing or reciting |
| 6 | pupils helping each other |
| * | teacher beating pupils |

| Rank | Pupils' response (Year 4) |
|---|---|
| 1 | teacher giving examples |
| 2 | pupils helping each other |
| 2 | teacher asking questions |
| 2 | teacher talking or reading to pupils |
| 3 | pupils singing or reciting |
| 3 | pupils doing practical activities |
| 3 | pupils writing about their own experience |
| 4 | pupils talking about their own experience |
| 5 | pupils asking questions |
| * | teacher beating pupils |

*rank score = 0

### *2.3.6 The Home Environment*

It was difficult organising a meeting of community members and eventually the deputy-principal arranged for some of the parents that brought their children to school to be interviewed. Seven parents volunteered to stay, and another parent arrived near the end of the interview, so was spoken to separately. The parents interviewed (all female) are engaged in farming and they all have pupils at the school between years 1 to 10. The parents said that there were good relationships between the community and the school and that they always come to the school when they are asked. Many parents cannot come to the school because they have younger children to look after or they have to work. Getting a daily income is more important than going to their children's school. They commented that they didn't really have time to answer questions but had come in specially to do so.

The teachers say the relationships are not good, there is little parental support and parents think that by coming to the school when asked they are getting involved with the school; the parents give nothing to the school. More than half of the parents never turn up for parents meetings, the only time all parents come to the school is when uniform material is being handed out. Some of the parents used to come and help in the *kola kanda*[3] programme; however, the programme ended when parents stopped coming to the school. If a parent is asked to come into the school, for example if their children's progress needs to be discussed, and does not turn up, teachers said that usually the pupil will be absent that day. Another case was quoted where a mother had asked the teachers to give her child extra lessons. The child then got bullied by other children saying that he must be stupid if he needs extra lessons, hence the child refused to attend the lessons. It appears that the many social problems in the village may account for poor relations between the school and parents, there seems to be little attempt by either side to resolve the situation.

### *Parents' role in schooling*

The teachers believe that more involvement by the parents in school activities will improve the pupil's motivation. One teacher mentioned the case of a boy in year 4 whose mother is working in Singapore. The teacher has sent a number of letters to the father asking him to come into the school, but he has never turned up. She believes that if the child is helped at home he could do very well at school as he will work if someone stands over him. Although parents state that it is important to be involved in their children's school because the get to know their child's strengths and weaknesses, there is no evidence of them being involved. They are happy with their children's schooling, but despite being asked numerous questions about what their children actually learn in school, parents were unable to give a clear answer. The general response was *'the teaching is good'*. When the group were asked whether their children talk about what they do in school a parent said *'yes, they talk about their homework and if they have to take something into school'*. They talk about special events that happen at school, e.g. *'they talked about your (research project) visit and taking photographs'*. As a final statement one parent said, *'the children learn what is in the syllabus; they learn what should be taught'*.

'What do you learn from your children?' was a question put to the group of parents. *'I have learnt model making'* and *'I know about the metric system'* were examples quoted by the parents. Their children do ask them questions, though often they cannot answer the question or they do not have time to sit and talk to their children. One parent said the best time for talking to her children is when they are watering the plants. The parents believe it is good that their children talk about what they do at home in school. If this happens they believe the children are being encouraged in school and it may encourage them to do more homework. One parent believes that *'doing practical work and learning what is around them is better than looking at pictures in books'*.

Concerning improvements the parents would like to see in schooling, they emphasise the standard of the school. If the standard were to be improved, more children would come to this school. They feel the school needs a laboratory but they say nothing about the lack of materials (reading and writing), or the lack of adequate sanitary and water facilities. One parent said that her child came home and complained that his classroom was too small, the child is in year 4 and the room was observed to be spacious and well equipped. Possibly parents view items such as a laboratory as an indicator of the wealth of the school, as is having electricity and a night-watchman, which would improve the schools popularity and status. This would lead to an increase in pupil numbers and hence more resources, as the larger schools receive more equipment and resources.

Parents say more attention should be given to gifted children, and again this relates to the status of the school. If more pupils get through the year 5 scholarship exam, the school receives a higher rating and parents seem to more concerned with this than what their children actually learn. However they did mention that there should be remedial classes for weak pupils and the parents should be given more recognition. Regarding the last point there seems to be a conflict as parents say they have no time to be involved in school activities and teachers indicated that generally parents are not interested in school and are one of the major problems for the school (parents did not mention the social problems in the village).

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[3] *school nutrition programme*

For their children's futures they wish for them to have good jobs, such as teaching. Being a farmer is good as you are independent, if you are educated you can be a good farmer. The parents do not want their children to be the type of farmers they are. The idea of having a school agriculture plot, purely for the use of contextualising learning, was put to the parents. This caused a lively discussion amongst the parents and they all agreed it was a good idea. *'Yes, they would come to the school to be involved with this'*, was the general response. The parent who was interviewed separately has four boys at the school (in years 4 to 9). All of them are considered to be backward and their reading and writing skills are very poor. Unfortunately the discussion was held in the principal's office because he requested it, and he was also present throughout the discussion. The mother knows all of her children are weak in school. They are farmers and the children stay at home often to help on the farm, especially at peak periods. She feels that her children's schooling is not suitable for them, whilst the principal was out of the room for a few minutes she mentioned that her children should be taught to *'do something useful with their hands so that they will gain beneficial skills which they can use in their future'*.

### 2.3.7 Contextualising teaching and learning

To contextualise teaching and learning in this school, where there are many social problems, teachers believe 'common experiences' rather than individual experiences should be used. The principal, on the other hand, said *'this can't be done because the curriculum is too rigid'*. Teachers agreed that contextualisation would be a good approach to learning - pupils can remember things better, especially subjects like Science, *'if we try to teach Science from a book it is a completely new subject. If we relate it to the pupils home environment it is more relevant'*. An example was given where pupils were taken outside to stand under a tree when they were discussing the effects of shade in a science lesson. In one year 5 Environment lesson, pupils planted a banana tree and used compost as a fertiliser to see how well the plant grew. They also planted flower beds. The latter two activities were done by a teacher who has now left the school. The teachers say that pupils enjoy practical sessions; their motivation and participation by all is greater, but they do not do much practical work in school (see Table 15). Pupils ask questions and remember things better when they do practical activities; however, teachers say they cannot do practical activities unless they are in the curriculum, because there is not enough time. Also, pupils would not bring materials required for practical lessons. The teachers said they would need more training to use such an approach of contextualising teaching and learning.

### 2.3.8 Agriculture in contextualising teaching and learning

Pupils were asked a number of questions that tried to find out whether, in their learning, there was any evidence that a contextualising approach had been used, either knowingly or unknowingly by the teachers. Various pupils made the following comments *'in school we learn subjects, at home we do not. In Science we learnt how to plant a seed. I learnt how to do that at home but the method is different. School teaches the wrong way; they use pots in the classroom which is not real. My father shows me how to plant seeds in a paddy fields'*. This boy also mentioned that the teacher did not ask them about their experiences in planting seeds. *'At school we learnt how to preserve limes, but our parents already know how to do this'*, *'at home and at school we learn how to sew, but at school we must sew how the teacher wants us to, while at home we can do what we want. At school we learnt a new stitch'*.

During a classroom observation, a informal discussion took place with some year 4 pupils, regarding a banana plant outside their classroom:
'What can you use a banana plant for in school?' *'To measure height. To measure width. You can use the stem to make printing blocks'*
'Why did you mention these uses?' *'In class we measured the blackboard. In class we learnt how to make printing blocks'*.
'Do you prefer to work in the classroom, or outside?' *'Outside'*
'Who planted the banana tree?' *'Last years' year 5 class'*
'Would you like to plant a banana tree?' *'Yes!'*
'Which do you prefer - to measure the blackboard or the banana tree?' *'The banana tree!'*
Pupils had never actually carried these activities out in practice, although it was understood that previously a teacher (who has now left) had done something similar with the previous year 4 pupils.

If agriculture was to be used as a means for contextualisation teachers feel they would need more agriculture training as generally pupils know more about agriculture than they do. They feel that utilising pupils' agriculture would be good, but at present can't visualise it being used in any subject other than Environmental Science. At this point a lively discussion ensued in which the following was said by a year 4 teacher, *'for weak pupils this would be a good method as they would get more recognition. If it could be incorporated into Maths and Science, such as measuring out a hole in which to plant a banana or coconut tree, or using them to measure the effects of shade. In Language the instructions for digging the hole could be in English. Reading and writing skills could be developed when writing a report monitoring the tree.'* The teacher then said, *'I've only just got this idea - I think I will try it out!'*. The other group of teachers were not so certain about the approach, especially when relating it to agricultural experience. They were dubious about the approach as pupils want to get away from agriculture; being a farmer is seen as failure, a job for 'backward pupils'. The attitude to agriculture would prevent this approach being used in grades higher than primary level. Teachers said that it would be good if the school could do more to make the pupils aware of the importance of agriculture, but another problem would be making the pupils understand that they would be learning in the context of agricultural experience, not learning about agriculture.

When evaluating pupils progress using such an approach, there were two conflicting views. One group of teachers (relatively older teachers with more teaching experience) said that the approach is difficult to evaluate as some criteria of assessment are not clear. They say the approach is suitable for all pupils, as all standards can participate in practical activities. The second group of teachers (younger teachers with less teaching experience) said that evaluating the pupils progress is not difficult as they were taught in INSET. They state that with practical activities the pupils are unlikely to write anything in exercise books. If parents see their children's exercise book empty they are not happy. This group of teachers also believe that practical activities, although the pupils enjoy them, do not help the pupil get good end of term marks. Because of home backgrounds the approach is not suitable for all pupils.

### *2.3.9 Issues arising from school B*

The school has many problems, identified by the teachers primarily as the lack of involvement and concern by parents in their children's schooling. Parents have little involvement in the school and consequently know little about the schooling their children receive. Parents seem to view the status of the school as more important than what their children actually learn. Teachers believe self-motivation of pupils is lacking due to the many social problems pupils face at home and that children's education is not a priority. Overall, teachers appear to be happy with the training they have received, but in order to be more innovative in their teaching methods they require further and frequent training specifically to do this. Generally teachers in the school follow the teachers' guide step by step and although it allows for teachers to use other methods, teachers do not know how to do this.

There appears to be low teacher motivation and lack of visits by Master teachers and education officers, and poor relationships between the school and community probably contribute to the problem. Pupil motivation is also low; the average attendance rate is only 65% and, according to teachers, due to the lack of parental support from home. Teachers are more concerned with getting good pupils through the year 5 scholarship exam than ensuring that all pupils leave the school having reached basic competency levels in reading, writing and arithmetic. The school lacks teaching and learning resources as well as materials such as exercise books and pencils, because pupils don't bring these items from home. There are no adequate sanitary and water facilities but there is electricity and a night-watchman.

There is not enough decision making at school level, especially, for example, in the timing of the school terms. In this area, at certain times of the year, flooding keeps many pupils at home. It is believed that the exam system should be made to accommodate the differences in the background and experiences of rural children compared to urban children. Teachers identified areas they need help in, and many centre around training in new teaching methods. Training in assessment procedures also would be an important and beneficial area. Teachers believe that the curriculum is relevant to the lives and backgrounds of the pupils; however, practical activities cannot take place unless they are in the curriculum, because lesson time is a constraint. If there is an activity in the curriculum there are no follow-up activities on the same subject to do at a later stage.

Teachers mention also the importance of an awareness programme for parents. This may help them understand the value of educating their children and the possible benefits they may receive from their children's education (e.g. improved hygienic and agricultural practices).

Pupils appear unable to relate learning environments at home with learning environments in the school. It was mentioned that practical work at school is 'not real' because it takes place in the classroom, when realistically it would only take place outside. In this school pupils appear to have little contact with agricultural practices, considering most of their parents are farmers. This could be due to pupils not thinking it was 'right' to mention the agricultural tasks they were involved in daily, as during interviews a number of examples of their agricultural activities arose.

Overall there appears to be little evidence of the use of a contextualised approach to teaching and learning in this school. It may be attributed to a number of factors:

1. the curriculum is rigid and teachers feel they must follow it step by step;
2. teachers have not been exposed to such an approach to teaching and learning;
3. teachers have little confidence in themselves to enable them to adapt what is in the curriculum to the local environment ;
4. the principal does not motivate teachers into improving the general standard in the school;
5. there are poor relationships between the community, parents and the school.

## 3 Findings from the country study

Sri Lanka's education system has been developed over many centuries, and at present offers free education for all from year one through to university level. It has made concerted efforts to improve the quality of education, and a high literacy rate (88%) and low drop-out rate (4%) are among some of the country's achievements. Despite these and many other high achievements, the problem of remoteness and difficulty of access to rural primary schools still remains an unresolved problem, which in turn affects the effectiveness of these schools.

At present rural primary schools in Sri Lanka face many problems and the case study findings revealed the following general problems:

- Inequitable distribution of resources, both human (lack of trained teachers) and physical (lack of equipment), exist between urban and rural primary school;
- Many disparities in the education system, especially between urban and rural schools;
- Poverty and health (malnourishment) are major problems which affect the pupils education;
- Handwriting skills are very bad because the pupils have no facilities in order to practice at home;
- Few reading materials are available to the pupils, such as newspapers, and many RPSs have no library;
- There are no media facilities such as television and radio;
- Many of the pupils will be unable to continue their schooling after year 9 because there are no transport facilities available;
- Classes are overcrowded and teachers are unable to manage in large schools due to poor skills in classroom organisation;
- Rural primary schools are getting smaller and teachers are not motivated in these schools as they receive no attention from school authorities (inspections or Master teachers);
- In some cases there is little parental support and lack of co-operation from the community;
- There is high absenteeism of pupils and teachers;
- Lack of infrastructure. Although transport on public buses is subsidised, often the problem is lack of bus service;
- Substantial variation between schools, divisions and provinces in the availability and deployment of primary teachers;
- Lack of incentives for all teachers, including primary level teachers, to serve in disadvantaged areas;
- Restricted opportunities for primary teachers to develop their careers within the field of primary education.

Apart from these general problems there are many macro problems which specifically affect the effective functioning of rural primary schools, and especially those found in the poor and disadvantaged sectors of society. Interviews with officials from the National Institute of Education and findings from the field work identified many areas that need urgent action. Recent studies (NIE, 1995) have revealed that achievements of primary school children in Mathematics, Language and Life Skills are disturbingly poor and that disparities in achievement levels are usually high between urban and rural pupils and between those belonging to different provinces; less than 30% of primary level pupils complete schooling with mastery levels in numeracy and literacy.

Often teachers working in rural schools view their pupils as being ignorant because they come from low level socio-economic groups. These pupils, the majority of whom are likely to come from farming backgrounds, lead harsh lives in which their contribution to the family income must often come before their education. This leads to high levels of absenteeism during peak times in the agricultural year. The case studies illustrate that many children have very responsible jobs working on the farm, looking after the home and caring for younger brothers and sisters. They often work long hours and survive on low nutritional diets. They have little time and often no facilities for studying at home. No special support is offered to teachers in rural primary schools, and only a few selected schools get support from private donors. Many rural primary schools rarely, if ever, get visits from educational inspectors or master teachers who are often overworked, especially in rural areas where accessibility is difficult.

At present the education system is very examination oriented with children in years 1 and 2 already attending private lessons in preparation for the national scholarship exam in year 5. Many of those interviewed stated that the year 5 exam put too much pressure on pupils and should be eliminated. Consequently, slow learners, disadvantaged groups and the majority of the rural population are neglected in terms of the resources for their schools and by an urban biased curriculum. The learning needs of the rural sector are often different from those of the urban sector in terms of pupils' ambitions, opportunities available to them (many are physically unable to continue with their education because of transport problems) and parental attitudes to their education.

In the past few years, Sri Lanka has revised the primary school curriculum in an effort to move towards a 'pupil-centred' approach to learning. Teaching is, however, still 'teacher-centred' and this is primarily due to the pressure on teachers to cover the curriculum and prepare pupils for the national year 5 scholarship exam. Although the curriculum has been revised, the country is still working under the same education system, which needs to adapt in order that curriculum changes may be implemented successfully. Some educationalists believe there is an imperative need to modify the curriculum so that it is less academic and more orientated towards life skills and social skills. In academic subjects there needs to be more self learning, experiments and problem solving skills. More community involvement is needed along with more exposure to external situations so that children's general knowledge is improved. At present the curriculum is not really relevant to the lives of rural school children. Although the curriculum allows for some degree of flexibility by the teacher, during the fieldwork it was evident that few teachers knew this, or had any idea how to go about implementing their ideas. Teachers frequently stated that a contextualised approach to teaching and learning is a good idea, but they need more training and support in methods for implementing such an approach.

Contextualising teaching and learning is not recommended specifically in Sri Lanka's educational policy. The country is looking towards 'life long learning' with activity based curricula and self-learning activities, but these are not being practised. An external donor has undertaken a pilot project, which closely follows the theory and practice which underlies the contextualisation of teaching and learning, through the use of an agriculture plot and nutrition programme. Generally agriculture is considered to be a poor and uneducated person's livelihood. Using agriculture as a means for contextualising teaching and learning could lead to parents interpreting this as school agriculture lessons, which are unpopular in some countries. During the case studies, however, this was rarely given as a constraint by parents. In fact, on a number of occasions, parents said that such an approach would make their children "*better farmers*". There is clear evidence from the pilot study in school A that such an approach makes learning more enjoyable for pupils and teachers, and parents seem also to appreciate it. During interviews members of the local community, the agricultural experimental plot and the nutrition programme in this school were referred to constantly. The community also is involved through the school providing a type of extension service following experiments it carries out on the agriculture plot.

# INDIA

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# 1 Education in India

India, a union of 25 states and 7 union territories spread over 3,287,269 km$^2$, is a parliamentary democracy with a federal structure. The Indian constitution which came into force on 26th January 1950 provides the basic legal framework for governance. India is the second most populous country in the world with 846.3 million people (1991 census) accounting for 16% of the world population. More than 74% of the population lives in rural areas and the majority are poor.

India was under colonial rule until 1947. During this time it had inherited an educational system that had become totally irrelevant to the lives of the people. Almost 50 years after independence, it is still struggling to realise the goal of an indigenous educational system. Basic education was one of the important goals of the freedom movement and Mahatama Gandhi, the Father of the Nation, even while leading the epic struggle against colonial power, advocated the adoption of an educational system that centred around agriculture, spinning and other forms of socially relevant productive work.

Article 45 of the Indian Constitution enjoins that *"the state shall endeavour to provide within a period of ten years from the commencement of this constitution, for free and compulsory education for all children until they complete the age of 14 years"*. Over the last few decades the country has seen an increase of spatial spread, infrastructure, and increased coverage of various social groups. However, the goal of redeeming this constitutional pledge continues to be elusive.

## *1.1 Elementary Education*

The elementary education[1] system in India is the largest in the world (Figure 1) In 1994/95, 149 million children, aged 6 to 14 years, were enrolled in primary and upper primary schools, accounting for 82% of the country's population of school age children. Primary schools within a walking distance of 1 kilometre are available to 95% of the rural population, 84% have upper primary schooling facilities within a walking distance of 3 kilometres. Of the total number of children enrolled in school at the primary stage, only 42.8% are girls. Current retention rates are 62% at the primary and 47% at upper primary stage.

With reference to most indicators of educational development - literacy levels, enrolment of school going age children, access, quality of facilities, participation and learning achievement - there are differences between states and within states across regions, gender, rural/urban populations and social classes. Nearly half of the country's illiterates live in the four low literacy and high population states of Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. In these states it is estimated that only one third of 6 -14 year old children attend school. The current rate of adult literacy is 52% but only 40% of women as against 64% men are literate. Rural female literacy is half the rate of urban female illiteracy and 70% of non-enrolled children are girls.

### *1.1.1 National Policy on Education (NPE)*

A major development in education in the past decade was the adoption of a new national educational policy in 1986. The NPE rightly identified universalisation of primary education; education of women and the disadvantaged; emphasis on the acquisition of minimum learning levels; and, vocationalisation of education, as its major thrust areas.
Specifically, the following targets are fixed for the eighth Five Year Plan (1992-97):

1. Universal enrolment of all children including girls and those from schedule castes (SC) and schedule tribes (ST);
2. A primary school for all children within a distance of 1km; non-formal education facilities and priority for the education of the girl-child;
3. Increasing the ratio of the primary school to upper primary school from the existing 1:4 to 1:2;
4. Reducing the drop-out rates from the existing 46% (I-V) and 60% (I-VII) to 20% and 40%;
5. Achievement of minimum learning levels by almost all children at the primary level and introduction of this concept at the upper primary stage.

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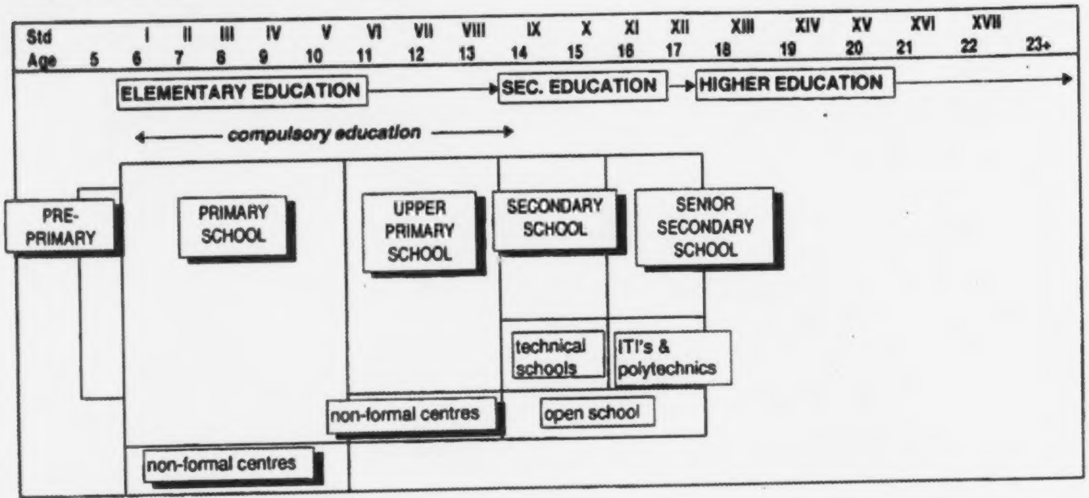
[1] The period of compulsory education from standard I to standard VIII is known as elementary education as illustrated in Figure 1.

**Figure 1**: Structure of Education in India


Std
I II III IV V VI VII VIII IX X XI XII XIII XIV XV XVI XVII
Age 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23+
ELEMENTARY EDUCATION
SEC. EDUCATION
HIGHER EDUCATION
compulsory education
PRE-PRIMARY
PRIMARY SCHOOL
UPPER PRIMARY SCHOOL
SECONDARY SCHOOL
SENIOR SECONDARY SCHOOL
technical schools
ITI's & polytechnics
non-formal centres
open school
non-formal centres

*Source: DOE, 1994*

### *1.1.2 Education for All (EFA)*

Education for All continues to be the focal point of current endeavours in education. To achieve EFA a two-pronged strategy of universalising adult literacy and universalisation of elementary education (UEE) in a mutually supportive manner are being followed. EFA in the Indian context implies expansion of early childhood care and education (ECCE) activities; UEE; reduction in illiteracy; provision of continuing education and skills training for neo-literates; empowerment of women; improving the content and process of education to better relate it to the environment; and enhancement of people's ability to learn and cope with problems of livelihood and environment. Current strategies to achieve the goal of EFA are based on a broader functional view of education. That is, providing a wide diversity of learning opportunities and a dynamic, cumulative, lifelong process which applies to all people but lays special stress on girls and those from disadvantaged sectors of society. The strategies include:

- a large, systematic programme of non-formal education with quality comparable to formal education;
- linkages between ECCE, primary education, adult literacy, post literacy and continuing education;
- forging an alliance of teachers, NGOs, voluntary agencies and community to further the cause of elementary education;
- professional upgrading of teachers.

### *1.1.3 Strategies for the Universalisation of Elementary Education*

Specifically, the strategies for UEE include:

- a disaggregated approach with focus on the preparation of district specific, population specific plans through micro-planning involving people's participation;
- introduction of Minimum Learning Levels (MLL) in schools to improve learner achievement;
- strengthening alternatives to schooling;
- convergence of different schemes of elementary education and related services;
- improving teacher competence.

The country has launched several major initiatives during the past few years to achieve UEE. Operation Blackboard is one such project whose aim is to provide all rural primary schools with essential facilities like classrooms, blackboards and other basic equipment. More than 300 Navodaya

Vidyalayas (special schools) have been set up in rural areas throughout the country. They seek to provide good quality education to talented children from the rural areas and the disadvantaged population groups, virtually free of cost. Implementation of pre-vocational and vocational programmes and generous financial allocation for the purpose is also a major action that has been taken to impart to education a relevance to contemporary social life. Non-formal education programmes for school dropouts, working children and girls who cannot attend formal schools have been established. Teacher training has been strengthened through programmes such as the Special Orientation Programme for Primary Teachers (SOPT). District Institutes of Education and Training (DIET) have been established to provide training and resource support for primary teachers in all districts.

### 1.1.4 *District Primary Education Programme (DPEP)*

Another major development is the District Primary Education Programme with its emphasis on decentralised and participative planning and management, capacity-building and integrated, locally relevant curriculum. The goals of the DPEP are: to reduce differences in enrolment dropout and learning achievement among gender and social groups to less than five per cent; to reduce overall primary dropout rates for all pupils to less than 25% over measured baseline levels; to ensure achievement of basic literacy and numeracy competencies; and to achieve a minimum level of 40% in other competencies by all children. DPEP is currently being implemented in 42 low female literacy districts in 7 states and the objective is to cover 110 districts by the end of the eighth plan. DPEP is supported with loans from the World Bank, European Commission and the Department for International Development (UK).

### 1.1.5 *Towards decentralised management of education*

National parliament as well as state legislatures have concurrent legislative powers on education but the executive powers remain with the states who are primarily responsible for the development of education, especially universalisation of elementary education. Within a state there is generally a four tier structure of administration - region/zone/range, district, taluka/block/mandal, and village. Traditionally the district has been the most important unit of administration and planning.

Under *Panchayati Raj*, a three tier structure of local self government in rural areas at the village, block and district levels exists in many states. Two landmark constitutional amendments were recently enacted which bestowed on the local bodies in rural and urban areas constitutional status and specific functions including provision of primary education. Accordingly village education committees (which are sub-committees of gram panchayats) have been constituted to promote decentralised management of education. The recommended roles and functions of the Village Education Committees (VECs) include:

- supervision over adult education, early childhood care and education, non-formal and primary education;
- generation and sustenance of awareness among the community, ensuring participation of all segments of population;
- promotion of enrolment drives;
- reduction of dropouts in primary schools by initiating measures and services (e.g. mid-day meal programme);
- assisting in smooth functioning of primary schools;
- seeking support of teachers and others for educational and other linked health and welfare programmes;
- mobilising resources and helping schools through the provision of water supply, sanitation, playgrounds;
- preparing plans for development of education in the village to attain total adult literacy and UPE;
- co-ordination with other social service departments.

### 1.1.6 *Curriculum Reform*

Designing a curriculum that is responsive to the diverse needs and aspirations of the people has remained a major challenge for Indian education. The experiments to develop such a curriculum began with the Basic Education scheme of Mahatma Gandhi in the early thirties. The scheme accorded a central place to productive work (usually agriculture, spinning) around which other

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subjects constituting general education were to be taught to the learner by correlating them with the craft. After the country became independent, the efforts to develop a curriculum that is socially relevant continued and several large curriculum research projects, most of them supported by UN specialised agencies, were launched. All those projects, in their own way, aimed at the development and implementation of decentralised, target group specific curricula, built around real life needs.

A major outcome of the NPE (1986) is the framework for a national curriculum for elementary education (NCF). The NCF recommended a common scheme of studies with core contents and a common ten year structure of school education. It highlights common core components for the promotion of: national identity; flexibility in the selection of content and learning experiences; emphasis on defining minimum learning outcomes for each area of learning at all stages; adoption of child-centred, activity-based approaches in curriculum transaction; and, continuous comprehensive evaluation. One outstanding achievement is that the NCF triggered curriculum research and development activity in the states on an unprecedented scale. The NCF highlights basic issues in curricular reform which are necessary to improvement the quality of schools, for example, MLLs, activity-based teaching, continuous evaluation, and flexibility to meet learner's needs. These issues will continue to inform and influence curriculum thinking and practice in the country for years to come.

Another recent significant contribution to curriculum thinking and practice is a report by the National Advisory Committee on Curriculum Load (1993) titled *'Learning without burden'*. The committee was to advise on the ways and means to reduce the load of the curriculum, particularly on young school pupils, while improving the quality of learning including capability for life-long, self-learning and skill formulation. In its analysis of the problem the committee has drawn attention to the deeper issues underlying the problem and in particular: neglect of understanding (as against ability to reproduce information in examination) as an aim of education; the centralised character of curriculum planning and textbook production; a poor grasp amongst teachers of their role as translators of the curriculum into classroom activity; non-interactive teaching; convention of teaching from the textbook; competition based social ethos; and the craze for English medium education.

The Committee's recommendations included decentralisation of curriculum planning and textbook preparation and increased involvement of teachers in these tasks. A major positive outcome of the report has been the need to adopt an attitude of 'joyful learning' and to reduce the academic burden as national guidelines for curriculum and textbook revision.

### *1.2 Karnataka State*

Karnataka is the eighth largest state in India in terms of area (191,791 km$^2$) and population (44,977 million). It is situated on the Western edge of the Deccan plateau and opens out on the west to the Arabian sea. The state is predominantly rural and agrarian. About 70% of its population lives in rural areas and 65% of its total labour force is engaged in agriculture and allied activities which generate about 49% of the state income. Karnataka accounts for 59% of the country's coffee production and 47% of ragi production. Rice, jowar, millet, groundnut, sesame and sugarcane are some of the major crops grown. Kannada is the official language of the state is spoken by more than 65% of the people. Selected indicators of quality of life in Karnataka are given in Table 1.

**Table 1**: Selected Indicators of Quality of Life in Karnataka

| *Indicator* | *Unit* | *1981* | *1991** |
|---|---|---|---|
| Birth rate | per thousand persons | 28.3<br>(33.9) | 26.8<br>(29.3) |
| Death rate | per thousand persons | 9.1<br>(12.5) | 9.0<br>(9.8) |
| Life Expectancy | | | |
| males | years (1981-88) | 59.8 | 55.9 |
| females | years (1981-88) | 62.4 | 55.9 |
| Infant mortality | per thousand | 69.0<br>(110.0) | 77.0<br>(80.0) |
| Literacy rate | per hundred | 46.21<br>(43.6) | 56.04<br>(52.21) |
| | males | 58.73<br>(56.4) | 64.13<br>(63.9) |
| | females | 33.17<br>(29.8) | 39.29<br>(39.4) |

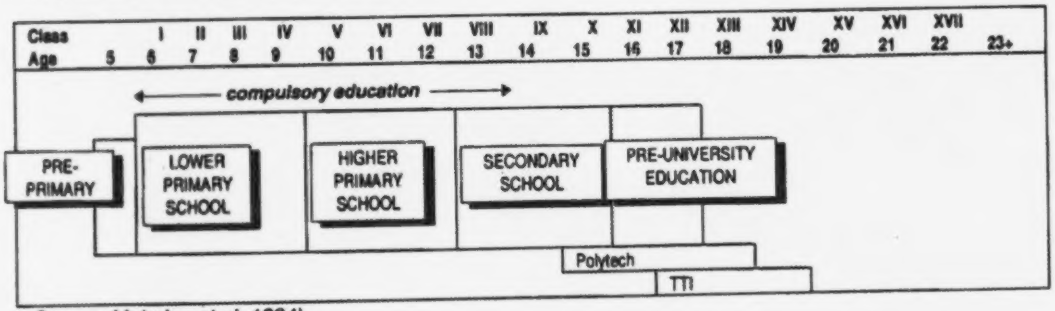
*Source: Mahajan et al, 1994* **provisional (all India rates)*

### 1.2.1 Education in Karnataka State

The educational structure in Karnataka (Figure 2) consists of four years of lower primary, three years of higher primary and three years of high school or secondary education. The state has registered significant progress in the development of elementary education with respect to facilities, enrolment levels and teachers. The total enrolment at primary level was 7.478 million (5.117 million boys and 2.361 million girls) in 1994. In 1991, 28% of teachers in lower primary and 39% of teachers in higher primary schools were women. The required pre-service training for elementary teachers is the Teachers Certificate Higher (TCH), a certificate course of two years duration taken after 12 years of schooling; 95% of the teachers are trained. In 1990/91, the number of pupils pér teacher was 46 (all India 42) and 54 (all India 37) at the primary and upper primary stages. Karnataka has a literacy rate of 56% (67% male, 44% female) and this is above the national average of 52%. Drop out rates in classes I to IV are 36% for boys and 37% for girls (all India 35% and 38% respectively) (1994/95).

To promote enrolment and attendance of children and prevent drop-outs, especially amongst children from SC/ST and backward classes, the Karnataka government implements several incentive schemes. Free uniforms are given to SC/ST children studying in government schools from classes I to V. Under the Akshaya and Vidya Vikasa schemes free textbooks are supplied to all children in primary schools. Under the Akshaya Food scheme, primary school children are provided with 3 kilos of rice or nutritious processed food for every twenty days of attendance (classes I to V). This encourages parents to send pupils to school, especially in classes I and II in which drop-out is highest.

**Figure 2:** Karnataka Education Structure



*Source: Mahajan et al, 1994)*

### 1.2.2 Primary School curriculum

Policies relating to curricular objectives, structure, content and evaluation for the whole state including design and development of curricular materials like textbooks, workbooks and teacher guides are formulated centrally at the secretariat level (highest policy making body of the government under the leadership of the Minister of Education) and executed by committees of teachers, psychologists, writers and educational experts. The curriculum and textbooks developed centrally are commonly adopted throughout the state.

The current primary school curriculum was developed in 1989. At the lower primary level it provides for the study of one language (mother tongue), environmental studies, mathematics, socially useful productive work (SUPW), physical and health education, art and creative expression, value education and remedial work (Environmental Studies is differentiated into social science and science at classes III and IV). At the higher primary level it provides for three languages, mathematics, science, social science, SUPW, physical and health education, art and creative expression, value education and remedial work.

The salient features of the syllabus are stated as: "*It is child centred and comprehensive, teachers are given scope for innovations in educational research and experimentation in the syllabus, it is competency and activity based for effective learning through an integrated approach, equal weightage is given to the content for both urban and rural children, science syllabus emphasises the relevance of* *scientific knowledge and method in daily life following an integrated approach, art and creative expression emphasises exposing the child to a variety of media of expression stimulating creative thinking and self expression".* The curriculum time allotted per week is 45 periods of 40 minutes each. The school year runs from June to April, with mid-term vacations during October. School teaching hours are 10.20 to 16.30 Monday to Friday. Exams up to class VII are taken at the school level. This year (1996) a district level public exam was introduced for class VII to enforce teacher accountability. The evaluation scheme consists of six tests, one mid-term and one annual examination in a year. The relative weight given to oral and written assessment is illustrated in Table 2.

**Table 2**: Oral:written assessment

| Class | I | II | III | IV |
|---|---|---|---|---|
| Language | 75:25 | 50:50 | 25:75 | 25:75 |
| Core subjects | 100:00 | 100:00 | 25:75 | 25:75 |

A minimum average mark of 40% between core subjects and language is required to pass the annual examination. Evaluation in non-academic subjects (SUPW, Physical and Health Education, Value Education and Art and Creative Expression) is done internally and achievement indicated in letter grades. Repetition generally occurs when pupils fail to meet compulsory attendance levels laid down by the Department of Education. These are 50% for classes I to III and 75% for classes IV to VII.

### *1.2.3 Panchayati Raj (Local Self Government)*

Karnataka has taken a leading part in establishing local self-government institutions. Currently a three tier system of fully elected decentralised governments at the village (Gram Panchayat), *taluk* (Taluk Panchayat) and district (Zilla Panchayat) levels is functioning. Under this arrangement responsibility for taking decisions regarding activities at the grassroots level, which affect people's lives directly, would rest upon the elected members of the people themselves.

The Panchayat Raj bodies are expected to play a very important role in the reconstruction of the education system. At the village level VECs have been set-up in which the headteacher has the role of member secretary. They are to actively involve the local community in improving enrolment, attendance, learning achievement and school environment. The VECs are sub-committees of the Gram Panchayats and enjoy statutory powers. For example, the utilisation of financial assistance to teachers and schools at the rate of Rs. 500 per teacher and Rs. 2000 per school per annum provided under DPEP requires the approval of the VEC. The money is to be deposited under a joint account in the names of the VEC president and secretary. The specific roles and functions of the VECs however are yet to be defined.

## *1.3 Education in Mysore District*

The selected schools for the case studies are in Mysore district. It is one of the larger districts in the state with a population of 3.17 million accounting for 7% of the state's total population and 6% of its area. The district has a high percentage population from SC/ST. More than 70% of the population lives in villages. The main crops grown in the district are paddy, ragi, jewar, pulses, cotton and sugar cane. It is also one of the largest cocoa production centres in the state.

Although the city of Mysore, the erstwhile capital of the Mysore State ruled by the Maharajas, is a well known centre of learning, art and culture, the district as a whole is educationally backward. Its literacy rate of 47% is much lower than the state average of 56%. There are 2411 government primary schools (out of a total of 2767 primary schools), 8039 teachers and 394,887 children enrolled in classes I - VII. Mysore is one of the new districts to come under the DPEP. The *taluk* to which the case study schools belong has 221 government primary schools, 1 aided school and 16 unaided schools making a total of 238 schools. There are 19 single teacher schools. The number of primary teachers in the *taluk* is 791 of which 710 teach in government schools. A total of 36,562 children are studying in primary classes of which 33,588 study in government schools.

# 2 The Schools

## 2.1 Selecting the schools

A pre-survey of ten schools was carried out by the co-researcher for the project, with the aid of Deputy Director of Public Instruction (DDPI), the Principal and a lecturer from DIET, Mysore. In total ten schools were visited and assessed in terms of their location, the number of pupils and their backgrounds, teaching-learning practices, co-operation of teachers, the community environment, and the overall suitability of the school in terms of specifications laid down in the project guidelines. The 'innovative' school was selected from this survey of ten schools. The 'average' school was identified by DIET and chosen because of its location near the 'innovative' school. The one-day school visits were identified by DDPI and lecturers at DIET. Table 3 gives a summarised background to the schools to illustrate the similarity in structure and surroundings.

**Table 3**: Summary of case study schools

| *Factor* | *School A* | *School B* |
|---|---|---|
| • type of school | government higher primary school | government higher primary school |
| • class | class 1-7 | class 1 - 7 |
| • number of pupils M:F (total) | 241:192 (433) | 202:214 (416) |
| • average monthly family income | Rs. 1000 | Rs. 3000 |
| • main source family income | agriculture | agriculture |
| • poverty alleviation programmes | state aid programmes | |
| • attendance rate | 80% | 80% |
| • drop-out | 10% | no data |
| • repetition | 10% | 10% |
| • teacher:pupil ratio | 1:48 | 1:52 * |
| • major social problems | poverty (see 1.3) | poverty |
| • adult literacy rate | 33% | 20% |
| • number of families in village (m:f) | 415 (1543:1432) | 520 (1828:1508) |
| • number of teachers m:f | 3:6 | 4:4 (inc. principal) |
| • experience of teachers | | |
| • principals length of service at this school | 6 years | 2 years |
| • donor support | none | none |
| • caste structure | 80% SC, 20% other | 80% Vokkaliga, 16% SC, 4% other |

## 2.2 An 'innovative' school - School A

### 2.2.1 The Community Environment

School A is in a village located over 30 km to the East of Mysore in a poor rural area where agriculture is the main livelihood. There are 415 families in the village and the total population is 2975, of which 1543 are male and 1432 are female (Census, 1991). The average family size is three to four children and six to eight members in total. Although the Karnataka State average literacy rate is 44% for females and 67% for males (Department of Education, 1993(1)), the literacy rate in School A's village is only 33%, and 54% of the illiterates (Census, 1991). The caste structure is 80% Scheduled Caste (SC) and 20% Lingayats, Kurubas, Nayakas and other castes.

Only 20% of the villagers own land with the average farm size being 2-3 acres. Those who do not own land work as agricultural labourers, fishermen, brick makers, lorry drivers (transporting sugar cane) and sand loaders. Each male labourer receives Rs. 30-35 per day and female labourers earn Rs. 20-25 per day when working in agriculture. Male labourers earn Rs. 200 per lorry load of sand, estimated to be around Rs. 80 per day (this work is only available for three to four months a year). Average monthly incomes are estimated to be in the region of Rs. 1000 per month per family.

There are only 306 houses in the village so some have more than one family living in them. Some houses have water (200 houses have tap water) and electricity but sanitation facilities are poor. Only 20-25 houses have toilets, though under a government Village Sanitation Improvement Scheme, families were given cement and materials to build their own toilets. Most of them, however, sold the cement and materials without building the toilet. The nearest health centre is in Gargeshwari 1 km away. There are no centres for food grain distribution or financial (credit) assistance because the taluk headquarters at T.Naraispur are only 6 km from the village and Gram Panchayat headquarters are only 1 km from the village.

In the village there is the '*Ambedkar*' Sand Labourers Association and a People's Awareness Association which organises cultural and social activities. The village has no community centre, so most activities take place at Siddappaji Temple. Approximately nine households have a television set and less than 150 households have a radio. About forty five households receive a district level newspaper and four to five receive a state level newspaper (in Kannada). Transportation is good with frequent buses to T.Narasipur (the *taluk* headquarters) and Mysore.

### Social and Economic Background

Along with the many programmes undertaken by the state to encourage SC/ST children to attend school, there are also a number of community aid programmes. The village receives aid under *Ashraya*, a poverty alleviation programme to build houses for the homeless. Under the Integrated Rural Development Scheme, the government gave farmers money to buy cows, bullocks, buffalo and sheep. Although community members and parents say there are no social problems in the village, interviews with the headteacher and another villager revealed otherwise. They inferred the following as reasons for the village remaining socially and economically backward:

- There is a high level of female illiteracy;
- There is heavy abuse of locally produced alcohol amongst women and men (the state government is planning a prohibition of locally produced alcohol);
- The immediate area surrounding villagers' houses are unclean and unhealthy ;
- There is a lack of nutritious food;
- There are many health problems;
- 95% of the village population belong to SC;
- There is a heavy belief in tradition and superstition;
- Villagers do not put government assistance to good use.

### Agriculture

Two rice crops can be grown each year because of channel irrigation facilities. 1094 acres of land is under cultivation of which 206 acres are under dry land cultivation and 687 acres are irrigated. The farmers are very traditional with a basic farming system growing paddy (yield estimate is 2 - 2.5 tonnes per acre), ragi and groundnuts. Coconuts (59 acres) and mango trees are also grown. The dry season is February to May and sugar cane and paddy are grown in irrigated areas; otherwise, ragi, groundnuts and vegetables are grown. July to December is the rainy season. On irrigated lands sugar cane and paddy are grown, in dry land pulses (lentils) and vegetables are grown. The peak times in the agricultural calendar are December to January (harvesting and land preparation) and June to July (harvesting and land preparation). There is no farmers' group or agricultural extension service in the village.

Agricultural land owners receive many benefits from the government. Seeds, fertiliser, electricity for irrigation pumps and no tax on agricultural produce are a few of these benefits. They also receive preferential interest rates for loans, special insurance and the use of agricultural marketing societies to ensure a fair price for their produce. In this village the landowners (20%) are the wealthy families.

### School and Community Relations

The community is interested and aware of what goes on at the school, which was revealed in the number of people who turned up for group interviews with community members. The headteacher, teachers, community members and parents who attended the group interview say that there are good relationships between the school and community. Any problems or improvements that need to take place in the school are put to the VEC. For example, the school requested a flag pole which was duly provided by the community. They have also provided furniture, drinking water and electricity (used for evening classes, PA system for fairs and events, radio for class VII science lessons). During national festivals the community gives sweets to the pupils. Very poor pupils are 'adopted' by members of the community, who will look after their basic necessities, such as books and stationary. Some homeless children or those from one parent families, are put in a hostel (five pupils in the school). Some of the community members provide materials for the school, one donated musical instruments and another has promised to buy school uniforms for those that do not receive them under the government incentive scheme (uniforms are provided free to SC and ST pupils in classes I to VII).

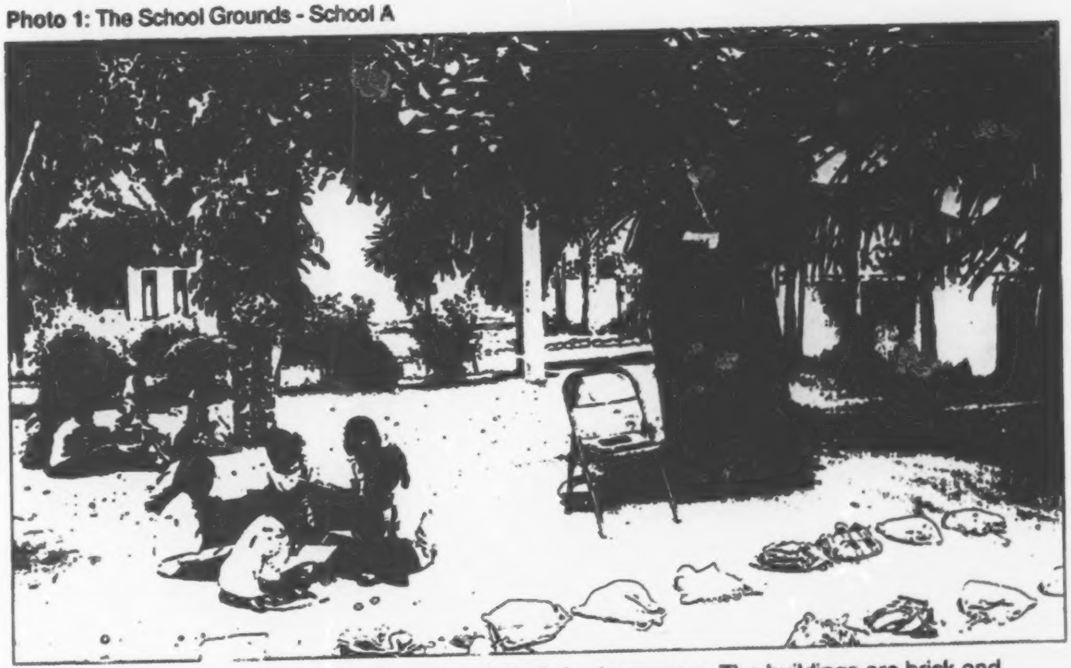
### *2.2.2 The School Environment*

School A was established in 1950. The school is considered a model Kannada school under the government scheme (started in 1992) of supporting selected schools catering to disadvantaged children in each assembly constituency. Under the scheme the 'model' schools receive additional financial and material support. The school has received furniture and other equipment for its development under the scheme.

### *Surroundings and Resources*

First impressions of the school are very pleasing. The school is very well maintained and the buildings and grounds are clean and tidy. A border of trees (mainly eucalyptus) marks the school boundary, with a wall and main gates at the front of the school. A few flower beds and fruit trees line the walkways to the classrooms. There are a few trees planted in the school grounds including, coconut, sandalwood, teak, jackfruit, mango, guava, pomegranate, tamarind, and papaya. There are some shaded areas which enable teaching to take place outside comfortably (Photo 1).

**Photo 1: The School Grounds - School A**



There are three main teaching blocks with a total of six classrooms. The buildings are brick and painted green and brown. Although the rooms are quite dark, they provide a cool learning place. There is insufficient classroom space so some classes, usually IV and V, must work outside (Photo 2). The problem has been enlarged by the recent addition of a high school class VIII which has taken over one classroom. Consequently classes I and II have been combined (more than 80 pupils in a room approximately 10 meters x 7 meters). There is a general lack of furniture in the school; none of the classes have desks. Pupils sit on the floor or on benches too low for them (Photo 3). The community has donated some equipment including a few tables and benches, a wall clock and bell, as well as providing electricity. All classrooms have a black board and many of the rooms have charts, posters, diagrams and pupils work on the walls. The school has a number of teaching aids for science (microscope, skeleton, balance, pipette, chemicals), a model of the planetary system, a band kit and sports equipment. Pupils have made a number of teaching aids such as a models to illustrate how a lung works and how the kidneys function. Pupils can borrow books from the school library run by one of the teachers. The books, provided by the government, are kept in locked steel cabinets. There is no playground at the school due to lack of space and finance.

### *Enrolment, Pupil Numbers, Attendance, Drop-out and Repetition*

There are 433 pupils enrolled in the school; 241 boys and 192 girls. The immediate catchment area for the school is the village with about 90% of children enrolled in the school. Children for classes V, VI and VII also come from the nearby villages all within a 2 km radius of the school. There are seven year classes with approximately sixty pupils per class (Table 4). Class VI is divided into two sections because of the large number of pupils. This year a high school has been sanctioned to the village and has started functioning in one of the primary school rooms with a class VIII class. A separate building is at present being constructed for the high school on a separate block of land (though this may take more than one year to complete).

**Photo 2:** Holding a class outside - School A

**Table 4:** Pupil Numbers 1996 - School A

| *Class* | *I* | *II* | *III* | *IV* | *V* | *VI* | *VII* |
|---|---|---|---|---|---|---|---|
| *Number of Pupils* | 60 | 67 | 56 | 52 | 68 | 79 | 51 |

Within the classes there are no divisions according to ability. Some children may be older than the class level, usually due to previous drop-out for reasons such as looking after younger brothers and sisters, helping in the home and working in agriculture. Repetition of pupils in classes I and II occurs when they fail to fulfil the 50% attendance requirement stipulated by the department. In classes III to VII repetition may occur when the pupil fails to attain minimum achievement levels. Overall repetition is about 10% and mainly in classes V and VI, said to be due to irregular attendance. Attendance rates are on average 80%, but are lower during peak labour periods in the agricultural year, such as the rice harvest in December and January and transplanting during July and August. Drop-out is highest at the end of classes I and II (around 10%), when the children may be kept at home to work, or to look after younger children when parents go to work in the fields. In an effort to stop this happening, early childhood centres have been opened in many villages. They are free, enabling parents to leave their youngest children (ages 3 to 6 years) in safe hands and allowing their older children, who otherwise would be at home, to go to school.

### *Assessment and Examinations*

The school follows the exam system laid down by government policy. There are no informal assessment procedures. The headteacher believes there should be public exams as class exams are not taken seriously by pupils or teachers. The headteacher says that the school is 'above average

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achievement' in the immediate area. More than 90% of pupils obtain pass rates in the year exams set by the teachers. Almost all of the pupils who pass out of class VII join the high school.

### *Village Education Committee (VEC)*

The VEC has eleven members with the deputy chairman of the Gram Panchayat functioning as its president and the headteacher of the school as the committee secretary. This committee is made up of village members, department officials and teacher representatives. Generally there are no parents on the committee (if for example the village head has children at the school this is incidental). The committee meets at regular intervals to discuss what is happening in the school such as enrolment levels, availability of facilities and vacant teacher positions.

Photo 3: The classroom - School A

### *School complex*

School A functions as the lead school for the school complex of seven schools. The headteacher is the president of the school complex. The teachers between the schools share resources (i.e. teaching aids), and also meet once a month to discuss teaching and learning processes. The complex has arranged demonstration lessons, an evaluation workshop, a quiz programme and a general knowledge competition for teachers.

### *School Supervision*

School inspectors should come to the school three times a year - prior to an inspection, for an inspection and after the inspection. Two visits are discretionary and may last up to half a day. The inspection is compulsory, lasts two to three days and examines attendance, programme of work, cash book, coverage of curriculum and talks to teachers and pupils.

### *2.2.3 The Teacher*

There are six female and three male teachers at the school. This equates to an average teacher pupil ratio of 1:48. Some classes however have higher numbers (class V, 110 pupils). There appears to be good teacher collegiality both with the headteacher and between teachers. Teachers all eat their lunch together. The school has daily staff meetings but the teachers who travel from Mysore also discuss school during the journey, which takes about 45 minutes.

All of the teachers have completed the compulsory teacher training course called the Teacher Certificate Higher (TCH). Most of the teachers said that their pre-service training was helpful. One female teacher is newly qualified (six months) and she said that pre-service training was helpful because previously, she did not know that children had to be motivated for learning, or what subjects should be taught at which age and which level. The other teachers have undergone a number of different training courses that have been introduced and changed over a few decades. In the early sixties, teacher training was a residential course. This course was different from many others as it taught the teachers about agriculture, health and nutrition both in practice and theory. The teacher who had been on this course said she still finds the training she had then, helpful today. The physical education teacher at the school (completed training in 1994) said training was inadequate in terms of practical skills. Teachers have had in-service training of varying duration but it is irregular and infrequent. A few teachers had been on the intensive ten day training under the Programme of Mass Orientation of School Teachers (PMOST). Another teacher has been on the Special Orientation for Primary Teachers (SOPT) programme, lasting seven days, which was built around the use of maths and science kits. She admitted that she does not use the kit and does not know where it is in this school. The PE teacher has had a refresher course and is, at present, being trained to use the school band set which they have only recently acquired. Two of the teachers have recently undergone training in Minimum Learning Levels (MLL). Teachers have also undergone in-service training in different subject areas to prepare children taking the class VII exam.

The headteacher is a person well accepted into, and respected by, the community and the pupils. He has been headteacher of the school for six years and according to verbal discussions with various community members has done much to change the school. The headteacher is a SC and was a victim of caste prejudice whilst teaching in another village school. In this school he is from the same caste as the majority of his pupils and is therefore very aware of their backgrounds and culture. Nearly all of the pupils in the school are from SC, fifteen are from ST.

The first group of teachers, despite the researchers' emphasising to them that this was not an inspection or assessment, appeared quite nervous. The second group of teachers were interviewed the following day and they were far more relaxed and open about the questioning. It is assumed that the first group of teachers had spoken to the second group and told them there was nothing to worry about. Judging from responses to questions and activities, many of the teachers have obviously never thought deeply about their problems as teachers in relation to their training and resource needs. Initial responses to questions always came back to problems with lack of co-operation from parents. Eventually the teachers mentioned some important areas where they feel they need to improve their teaching practices.

Teachers at primary level must be generalists in all subject areas. These teachers said that their training was only in one or two subjects, they feel that they need further and recurrent training in all subject areas. As curricula change, the teachers want training so that they are capable of teaching the changes as, at present, they receive no specific training to teach revisions. The maths teacher emphasised this point stating that the training she received in 1963 was good then, but now she cannot keep up with the frequent changes in topics and teaching methods; she would like regular in-service training. Teachers would like training built around what they do in the classroom. For example, bringing practical activities into teaching methods and building the lesson activity round the content of the textbook. One teacher said she would like to know how to use the environment (or 'things around us') in teaching practices, as she quoted (translation from Kannada) *'we see many shapes around us, fields, plants etc., that we could use in teaching Mathematics - I would like to know what else I could use in the environment in teaching'.* English, Maths and Kannada (where the teachers mother tongue is not Kannada) were areas they identified in which essential further and regular training is needed. Previously one of the teachers had been in an Urdu speaking school where she had taught Kannada. She was then posted to this school where she must teach all subjects but is not trained to do this.

In terms of their problems as teachers, a number of issues arose. Many children come from poor families, therefore the parents cannot afford to buy them materials for school and they come to school ill-equipped. Often pupils may miss school to help at home. When pupils get behind in work, teachers allocate a 'good' pupil to them to bring them up to the standard in the class by working outside school time. The teacher then asks the pupil questions to ensure that they have caught up and to make sure that the good pupil has been passing on the correct information; this method is used in all classes. There is a lack of equipment at the school and one particular example was given by the sports teacher: *'the school was supplied with twelve sports kits, but there are sixty pupils in the class'.*

Lesson observations revealed that teachers are enthusiastic and make the most of the difficult conditions in which they must teach. One teacher is responsible for a large class of around eighty pupils (class I and II combined). The classes were being held outside and class I was writing the alphabet whilst class II were reading from their Kannada text books (Photo 4). Because the group is so large, it is very difficult for the teacher to give all of the pupils the individual attention they need. The teacher adopts multiple class teaching methods, where the two classes are taught different subjects, not the same subject at different levels. The teacher and pupils are completely at ease with each other. The teacher moves around the pupils quite freely and the pupils enjoy her presence, being very attentive. The teacher has a pile of empty matchboxes and pieces of coloured plastic which she is going to use for counting.

In a previous lesson the teacher was playing a game with her pupils which involved one pupil chasing 'the leader' round a circle of the other pupils, the aim being to catch the leader. It appeared that one pupil was slow at running, so the teacher joined her running round the circle to try and encourage her. Despite the many restrictions and poor conditions teachers endure, all of the teachers wanted to stay in teaching and only one had a desire to get further qualifications to teach at a higher level (high school teachers are paid more). Teachers that travel from Mysore said they would like to stay working in rural areas if houses were provided for them near the school.

**Photo 4 Reading from Kannada text book (School A)**

Pupils and teachers were asked what they consider to be the characteristics of a good teacher (Table 5). Teachers view their task, apart from teaching in school, as being a counsellor and role model to the pupils. This may be particularly important in an area of severe poverty where parents have little time to spend with their children and may not be interested in their children's schooling, for example on pupil in class 4 said: *'If I stay at home, the headteacher comes to my house to find out why I have not gone to school'*. There is a deaf child at the school and his parents came to the school to ask the teachers whether he should be sent to a school for the deaf. The teachers had paid special attention to the boy (none of the teachers are trained to sign read) and they were pleased with his progress. The child was sent to the deaf school but ran away, back to this school, as he likes it better. Another pupil said a good teacher was one who told stories and taught them songs, he then said *'look Sir, he is even doing it now!'* (he was pointing at the sports teacher who was telling a story to his class)

**Table 5**: What are the characteristics of a good teacher? (School A)

| *Pupils' response* | *Teachers' response* |
|---|---|
| *A teacher should:*<br>· teach well<br>· visit them at home<br>· tell stories and teach songs<br>· gives them activities to do<br>· provide materials if pupils do not have their own | *A teacher should:*<br>· be knowledgeable about the subject<br>· observe school rules<br>· be punctual<br>· participate in all school activities<br>· treat all pupils equally<br>· be able to promote national unity<br>· earn the trust of the children<br>· have good relationships with parents of the pupils<br>· know the names of all the pupils<br>· know the backgrounds of the pupils<br>· not be distanced from the pupils<br>· be a 'model' in all respects<br>· be a counsellor<br>· give more to the school than take<br>· get along with other teachers<br>· respond to the children - treat them as their own<br>· not be selfish |

### *2.2.4 The Learners*

Overall the children appear to be in good health. None of the pupils wear shoes and the majority wear the school uniform, a maroon skirt or shorts and a maroon and white checked short sleeved shirt. Material for uniforms is provided free to SC and ST children. Most of the girls carry their books in brown canvas satchels which have been provided free (to SC/ST) by the government. At lunch time, children go home or bring food to eat in the school grounds. The pupils appeared happy in their lessons and the outside activities, especially physical education. Pupils are regimented to march to and from lessons in a line and when asked to speak, they automatically stand up with folded arms. Girls and boys sit on separate sides of the classroom and in separate groups when doing any type of group activity.

Teachers believe that children in the school are highly motivated and enjoy coming to school. Even when they are beaten they still come to school. Often at the end of school pupils will wait around to see if anything else is going on. In the higher classes pupils do activities, lower classes see what they will be doing when they move up to higher classes and this motivates them to stay in school. The majority of pupils say that going to school is to become knowledgeable and to get good jobs; all of the pupils have aspirations for professional careers - teacher, policeman, army, doctor, engineer. If children don't go to school it is for a variety of reasons listed in Table 6.

**Table 6:** Why do some children go to school and others don't? (School A)

| *Why do children go to school?* | *Why do some children not go to school?* |
|---|---|
| ◊ to be knowledgeable - acquire wisdom, wealth and health (*Vidya Buddhi*) | ◊ fear of punishment - prefer to stay a home than be beaten at school |
| ◊ to get a (good) job | ◊ not interested in school |
| • to study | ◊ don't want to go to school |
| • to become intelligent | ◊ prefer to work on farms and earn a livelihood |
| • to join the company of learned people | ◊ sold into child labour *(jeeta)* |
| • to get a job | ◊ drunken parents keep children at home to work in fields |
| • to become an educated person | • afraid of school because they cannot master the lessons |
| • to become wise and knowledgeable | • look after cattle at home |
| | • don't like to come to school |
| | • get beaten at school |

(• indicates response from class 5;◊ indicates response from class 4)

**Table 7:** What children like and dislike about school (School A)

| *What do you like about school?* | *What do you dislike about school?* |
|---|---|
| ◊ The teachers are good | ◊ fellow pupils stealing others' pencils, books, etc. |
| ◊ the way they teach - the teachers take two to three days to cover a lesson, so that all the pupils understand the lesson | ◊ other pupils swearing and using vulgar language |
| ◊ work in groups, all pupils participate | • the well, because the steps are slippery and dangerous |
| • The trees and the plants round the school | • classrooms are too small |
| • lessons are interesting as the teachers tell stories | • not enough visits and activities |
| • the teacher only beats us if we do something wrong | • no opportunity to learn by ourselves in school |
| • the cultural programme (Friday) - sing and dance | • it is dirty outside the school entrance |

(• indicates response from class 5;◊ indicates response from class 4)

#### *Pupils activities at home and school*

Information on activities at home and school was obtained through asking pupils to do a mapping diagram (Figure 3), and these were followed up with questions based around what pupils had drawn.

Household cleaning tasks are the activities pupils do 'most frequently' at home and at school. At school pupils are assigned duties such as watering plants and sweeping the classroom. Boys tend to be involved in agriculture more than girls. If there are no girls in the family boys may do household tasks such as washing the dishes. None of the pupils were able to directly relate learning at home to learning in the classroom and vice versa. On further probing one girl (who should be in class VIII, but left school to look after younger brother, and has come back into class 4), said that she learnt how to cook at home, but learnt about nutrition in school. She said she knows the value of including more green vegetables in cooking and she does this at home. Pupils are able to describe in detail the agricultural activities they are involved in. A class 5 pupil who weeds paddy fields gave a vivid and demonstrative show on how he weeds the rice field and how he harvests rice. A girl also in class 5 told us that her mother had taught her to put sand, red soil, salt and manure on the coconut plant. Another class 5 girl mentioned a specific plant, *tulasi*, that she waters. A written summary of the occurrence of activities on the mapping diagrams is given in Table 8, the first table refers to class 4, the second to class 5.

**Figure 3:** A pupil's mapping diagram (School A)

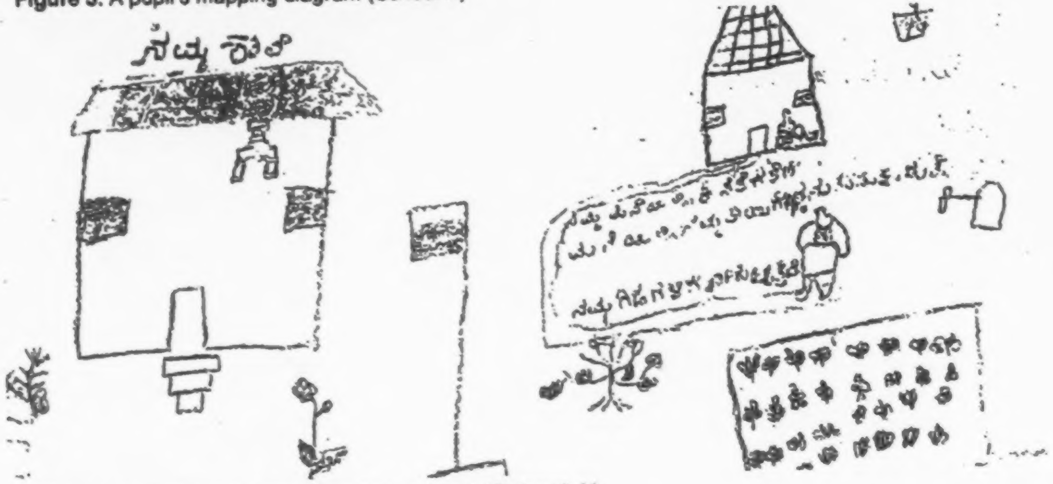

**Table 8: Activities at home and at school (School A)**

(summary of mapping diagrams by 12 pupils from class 4 and 5, by frequency of occurrence of each avitivity in the mapping diagrams)

| *Class 4 summary* | | | | | |
|---|---|---|---|---|---|
| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
| fetch water | 3 | 3 | water plants | 2 | 1 |
| clean/sweep house | 3 | 1 | read | 3 | 2 |
| wash pots | 1 | 3 | write | 2 | 2 |
| throw away rubbish | 1 | | clean classroom | 3 | 2 |
| go to shop to buy vegetables | 2 | 2 | play | 1 | 1 |
| play | 1 | | recites multiplication tables | | 1 |
| water plants | 2 | 1 | clean dishes | | 1 |
| take rice and ragi to the mill | 1 | | fetch water and milk for teachers | | 1 |
| wash clothes | | 3 | | | |
| prepares cooking stove for lighting | | 1 | | | |

| *Class 5 summary* | | | | | |
|---|---|---|---|---|---|
| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
| fetch water | 3 | 2 | water coconut plant | 3 | 3 |
| read | 1 | | read | 1 | 3 |
| wash pots | | 3 | write | 1 | 2 |
| go to shop to buy vegetables | | 1 | clean classroom | 2 | 1 |
| water plants | 1 | 3 | play | | |
| weeds paddy field (by hand) | 1 | | clean dishes | | |
| wash clothes | | 1 | fetch water and milk for teachers | | |
| prepares cooking stove for lighting | | 1 | assembly round flag pole | 1 | |
| controls irrigation in paddy field | 2 | | arrange furniture in classroom | 2 | |
| look after goats | 1 | | put manure on coconut plant | | 1 |
| collect forage for goats | 1 | | | | |

### 2.2.5 Teaching Learning Processes

Generally the school has no input in curriculum development, but the headteacher has brought some weaknesses in the curriculum to the attention of the authorities. The headteacher believes that the curriculum is partially relevant to the lives of the pupils, but that it should be decentralised. There should be more flexibility in school hours to allow for practical sessions and visits to take place. Overall it was thought that the curriculum was relevant to the lives and backgrounds of the pupils, though in some textbooks examples were irrelevant, using for example, aeroplanes and reference to Mysore; most children have never seen an aeroplane or been to Mysore. In such cases the teachers will try to relate the topic to an area of relevance to the pupils. For example in this case a bullock cart may be compared to an aeroplane e.g. through comparing speed, number of people it carries etc. Pupils have no choice over the subject area they learn in class as the curriculum is too rigid to allow for this. In the lower primary classes (I to IV) there may be a limited choice within the subject in selecting which topic is covered.

Compared to other schools in the area, the headteacher states that his school is doing the following that is different:

- the school works punctually from 10.20 am to 4.30 pm;
- children's attendance is followed up with parents;
- every Friday is a cultural programme of songs, dancing, quiz's etc.;
- physical education classes are held on Saturday mornings to increase attendance levels;
- uniforms are stitched neatly;
- homework is given;
- children learn in groups, through play and activities;
- children are taken outside the classroom, to learn through observations;
- fairs and festivals take place at the school;
- radio programmes are used for teaching (children's programme and science programme);
- children's out of school experience is used in teaching when possible;
- children are encouraged to ask questions.

Teachers say that they do not integrate subject areas, as each subject must be taught individually in 40 minute periods. If the opportunity arises to bring in another subject area they try to do this. For example if there is a language lesson that talks about distance they will bring in mathematics. They use connections between subject areas as examples, e.g. weather, season and temperature can be brought into social science, maths and language. Pupils are also encouraged to give their own examples and experiences. The class III teacher gave a recent example in which they were having a lesson about the festival of Mahadeshwara; pupils were able to describe how to get there and relate their own experiences, as many of them had been to the festival.

Group work is given for classes IV to VII, for two periods a week on a regular basis. In addition teachers say they organise learning in groups if it is suitable to the learning activity. An example was given where in a lesson the teacher may ask questions to the class, and allow the pupils to discuss in groups in order to answer the questions. In classes I to III the teachers have complete control of the timetable, which means that they can spend two time periods doing one subject and allows them sufficient time to do project or group work. The class III teacher stated that her class works in groups everyday for 80 minutes. In classes IV and above, the teachers must follow the timetable within the set time periods. Project work takes place to the extent of asking pupils to collect things (e.g. seeds and birds nests) to be used in lessons. They do not do continuous project activities. In the learning process, pupils are asked what they do at home, or whether they can give an example. They are also taken on visits to rice mills and sugar cane processing plants, but these are detached from the lessons as they are fitted in only when it is convenient rather than at the appropriate time in the lesson.

To further support teachers' responses to questions, a matrix ranking activity was used to find out about teachers practices in the school (Table 9). All of the teachers are trained and this training has shown through in their rankings. They have ranked 'pupils doing practical activities' highest, their interpretation of this most likely being pupils doing project work, individual assignments etc. These activities however, are not carried out in the school according to the teachers' interview. 'Pupils writing and talking about their own experiences' are also rated highly but again does not happen frequently in the school according to teachers' interviews. 'Pupils helping each other', through group work where a high achieving pupil is the leader, is a common method of teaching in the school, so this receives a relatively high rank. The method was observed during an arithmetic lesson for class IV: *The class is held outside, where pupils are sitting in groups of six, with boys and girls separated. Each pupil has been given a card with multiplication sums on it. There is a leader in each group who is nominated to guide and supervise the group and pupils are expected to help each other with the sums. The teacher moves between the groups and monitors learning.*

'Teachers asking questions' receives a low rank by both teachers and pupils. Lesson observations revealed that pupils do not respond to teachers' questions. Pupils say that they only ask questions when they don't understand something. A class V lesson on prime numbers was in progress and the teacher was explaining and illustrating numbers with and without factors. She asked questions to which pupils did not respond ('*can you give an example of a prime number?*'), she tried coaxing them further ('*why is 12 not a prime number?*') but pupils did not respond. She then told a pupil to come to the board and write a prime number, it was wrong, so the explanation of a prime number was given again. Pupils were involved in the activity and the teacher encouraged their participation. It is a difficult concept to teach and the teacher was trying very hard but there was little response from pupils.

In this school pupils are generally low achievers and the teacher must spend time following up a non-response to a question through giving more examples and coaxing. Unless it is a rote question pupils do not respond to the teacher's question. Usually pupils only ask questions when they do not understand something. As a method of learning, it is ranked somewhere in the middle by both pupils and teachers so it is favoured as a good method of learning. Pupils rarely ask inquiring, exploratory questions according to teachers' interviews and observations. Teachers do try to involve the pupils in lessons, through bringing them to the blackboard to give examples (see Photo 2). An arithmetic lesson for class III was observed. Again this lesson was being held outside in the shade of coconut trees, where children are called to the blackboard to work out subtraction problems. Children are active and the teacher encourages the pupils to participate in learning.

Pupils from classes IV and V carried out a matrix ranking activity. The rankings (Table 9) indicate what pupils do in the classroom. Class 4 pupils rank singing and reciting as the 'best method of learning', possibly because this method of teaching is employed on a wider scale in the lower classes. Another reason could be that the primary stage is divided into the lower primary which ends at class IV. Above class IV methods are more formal and examination oriented. Class V on the other hand ranks 'pupils doing practical activities' as the best method of learning. This may be interpreted generally as doing manual labour in the school and at home (e.g. sweeping, cleaning), activities which were predominant in the mapping activity (Table 8). These methods are reinforcements of classroom learning, rather than exploratory, investigatory learning experiences in their own right. Both groups rank talking or writing about their own experiences highly teachers try to relate, where possible, to pupils' own experiences. according to teachers interviews. Pupils' rankings indicate that this does actually happen in the school.

'Pupils helping each other' receives a relatively high rank by class IV and V. In this school teachers assign better pupils to the low achieving pupils to help them with their work both in and out of school. In all rankings, 'beating pupils' has a zero rank. 'Teachers asking questions' receives a low rank, possibly because the pupils are afraid when the teachers asks questions. During interviews with one group of pupils, the mapping activity was carried out in the morning and discussions and questions about the diagrams were to take place after lunch. In the afternoon one boy from the group was absent. The girls' explanation was that this boy was '*afraid we would ask him questions*'. 'Teacher talking or reading to pupils' is the most prevalent method of teaching in Indian schools and is disapproved of generally because it keeps the learners passive. In this school pupils and teachers give this a low rank. As the pupils rank pupil-centred activities highly as methods of learning, this indicates that there is evidence of a child-centred approach to learning in the school. Teachers talking or reading to pupils, and asking questions receive low ranks as methods of learning. Class IV pupils found it difficult to relate or connect learning in home with learning in school. They could only relate activities that were the same at school and at home, for example one pupil said '*I play at home and at school*'. The pupils were responsive to questions which dealt with something they enjoyed. When inquiring about whether they talk to each other in the classroom about things they are studying, all of the pupils tried to answer the question '*yes! The teacher organises us into separate groups of boys and girls*'. The idea that learning means learning from books and teachers is so deeply ingrained in the pupils that the methods of 'learning by doing' and 'leaning through practical activities' was interpreted as doing homework set by teachers (which again is a reinforcement of book learning conducted in the classroom), or reading books, or doing sums, etc., by themselves. While teachers did mention some practical activities they engaged the pupils in (e.g. watering and manuring plants, visit to rice mill, fields, zoo ) these were considered extra curricular activities for 'enjoyment' purposes. These activities run parallel to the school activities and do not converge with curricular learning objectives. No evaluation of the learning outcomes of these activities, or any follow up, is done by teachers which confirms this observation.

**Table 9**: Methods of Learning matrix ranking activity (School A)

| Rank | Teachers' response (group 1) |
|---|---|
| 1 | • pupils doing practical activities |
| 2 | • teacher giving examples |
| 2 | • pupils writing about their own experiences |
| 2 | • pupils talking about their own experience |
| 3 | • pupils singing or reciting |
| 4 | • pupils asking questions |
| 4 | • pupils helping each other |
| 4 | • teacher talking or reading to pupils |
| 5 | • teacher asking questions |
| 6 | • teacher beating pupils |

| Rank | Teachers' response (Group 2) |
|---|---|
| 1 | • pupils doing practical activities |
| 2 | • pupils helping each other |
| 3 | • pupils singing or reciting |
| 3 | • pupils talking about their own experience |
| 4 | • pupils asking questions |
| 4 | • pupils writing about their own experience |
| 4 | • teacher giving examples |
| 5 | • teacher talking or reading to pupils |
| 6 | • teacher asking questions |
| 7 | • teacher beating pupils |

| Rank | Pupils' response (class 4) |
|---|---|
| 1 | • pupils singing or reciting |
| 2 | • pupils talking about their own experience |
| 3 | • pupils writing about their own experiences |
| 3 | • pupils helping each other |
| 4 | • pupils doing practical activities |
| 5 | • teacher giving examples |
| 6 | • teacher talking or reading to pupils |
| 6 | • teacher asking questions |
| 7 | • pupils asking questions |
| 8 | • teacher beating pupils |

| Rank | Pupils' response (Class 5) |
|---|---|
| 1 | • pupils doing practical activities |
| 1 | • pupils writing about their own experiences |
| 2 | • pupils helping each other |
| 2 | • teacher giving examples |
| 3 | • pupils asking questions |
| 3 | • pupils talking about their own experience |
| 4 | • pupils singing or reciting |
| 4 | • teacher asking questions |
| 5 | • teacher talking or reading to pupils |
| 6 | • teacher beating pupils |

### *2.2.6 The Home Environment*

For the purpose of this research the headteacher sent messages to parents through the pupils, asking them to come to the school for informal discussions along with other interested members of the community. The interview started with six male parents and two female parents. Over the course of the interview various people dropped in to see what was going on. Consequently by the end of the interview a group of about 30 persons had formed. Despite the large group the interview was primarily directed at the parents and the researchers' tried to ensure that their responses were noted.

#### *Parents' role in schooling*

Parents feel it is important to be involved in the school, but this generally means they will attend school festivals and functions. Teachers and children are more motivated if parents show an interest in the school and parents can also monitor the progress of their children. Parents say they are satisfied with their children's schooling and say it is better than a government private school. However, they are unable to identify exactly what their children learn at school and what they feel they should be learning. Responses from parents included *'language well', 'to read', 'to write', 'to be numerate'* and *'to be empowered'.*

Parents come to the school when teachers ask them to, which is usually because of a problem with their child, such as low attendance, illness or wearing a dirty uniform. Parents say they visit the school at least once a week, usually to collect rice given under the mid-day meal programme. Some parents may monitor their children's learning by talking to the teachers. During one visit to the school a meeting was held with teachers and the headmaster after school had finished. Just as the meeting was about to start, a very angry father appeared and started shouting at the class I teacher. He was saying that his child wasn't doing any homework and that the teacher should be beating her to make her do the work at home. The teacher was very calm and explained to him how much work the child should be doing at home. The other teachers were smiling saying that it was a regular occurrence. Every Saturday the headteacher visits the homes of problem children, to talk to their parents and suggest ways to help them. The parents are generally pleased that he shows interest in their children and that he comes to talk to them. Teachers may visit children's homes, after or before school hours, to talk to parents when their children are continuously absent from class and when they fail to make satisfactory progress in learning.

Parents say that their children talk about what they do at school in a general way, especially if they have been praised or something special has happened. For example one parent said his child came home and said he had learnt to count from 1 - 20, the parent then said he asked his child to write the numbers. Another said his child talks about the teachers she likes. One parent said her child had taught her basic literacy skills (e.g. the alphabet and signing her name). In the pupil interviews one boy immediately answered *'I will go home and tell them that an English women came to school to speak to us'.* Parents are very busy and have little time to spend with their children. After working long hours in the fields, they are tired and do not have time to answer children's questions. When asked whether children would lean new things better if they can relate to their home life and experiences, the parents said 'yes'. They were unable to give any specific examples. Generally parents who are illiterate are less interested in their children's work than those who are literate. A few pupils' parents are teachers and they are interested and help them with their school work. Where parents are illiterate, elder brothers and neighbours were the people identified as helping them with their school work. Parents may ask about school, but not usually about what is learnt. They may, for example, ask whether their child received a prize or a good mark in a test and if not, why not.

Parents concerns about improvements needed in schooling are with regard to the newly established high school. They would like to see a high school that is above class VIII along with teachers trained specifically for the high school. The teachers there at present are only temporary. For the primary school they would like to see a playground, library and more sports facilities. Parents have high hopes for their children to have professional careers as lawyers, doctors and teachers.

### *2.2.7 Contextualising Teaching and Learning*

The headteacher believes that it is important to use knowledge the pupils already have along with their experiences in learning something new. In some lessons, e.g. history, the local level will be discussed before learning about the country's history. If, for example, the science lesson is about coconuts, the pupils will be taken outside to look at coconut trees.

Teachers all agree that learning is more effective if what is already known or experienced by the pupils is used as a base for learning something new. Some said that this idea is given in their teacher training. The teachers say that they do use pupils' experience when learning a new topic. The following were given as examples:

- a lesson on architecture in Karnataka State - the lesson was about a building many miles from Mysore. The teacher built the lesson around local temples, the ones that the pupils have been to and know about. They also visit the temples in school groups;
- a lesson on heat and temperature in science. The lesson is based around heating water in the home and pupils direct experience of the activity;
- cleanliness as it relates to home life is brought into an environmental science lesson;
- in a lesson on the sea, the teachers will relate to what the pupils have seen, such as a river or small lake, then describe the sea in relation to this;
- in social sciences lessons, the pupils talk about the family at home and parents occupations.

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Teachers try and use what is available around the school as teaching aids and to relate the lesson to the pupils' experience. For example, they use plants in the school grounds, a paddy field opposite the school and make visits to sugar cane mill and a lime factory. Visits, however, are arranged when it is convenient, rather than when the subject area to which the visit relates is being taught. When there is going to be an outside school visit, attendance on that day will be noticeably higher than normal (90-100% attendance compared to 60-70%). Formal evaluation of these activities does not take place, as they are outside the curriculum. Informally the teachers make observations and give 'a pat on the back' if the pupils do well. According to teachers, motivation and interest by the pupils is noticeably higher when they participate in activities. Learning is said to be more effective as the pupils ask more questions and get involved in the activity. After a visit they will ask more questions, especially amongst themselves. The pupils' responses to questions are more meaningful and they retain things longer. An example was cited in which the pupils were taken on a visit to Mysore Zoo last year; even now the pupils are able to describe vividly what they saw and did on the visit.

### *2.2.8 Agriculture in contextualising teaching and learning*

Teachers agree that contextualising teaching and learning using, for example, agriculture, is a good idea but they do not know how they can do this. When teachers were asked whether or not they used pupils' experience in teaching and learning they gave a number of examples some of which did related specifically to agriculture. In environmental science there is a lesson on crops and cropping patterns. Pupils are already familiar with these practices, so the teachers say they draw on analogies and metaphors made between home and the school. The maths teacher gave a very good example, saying that he has taken pupils into the rice field opposite the school to illustrate to pupils how, for example, straight lines and angles are used in practice. Another teacher said that in counting sheep may be referred to as many of the pupils herd sheep. In a lesson on plant parts, children are already knowledgeable about this so their experience is brought into the class lesson. To teach about wild animals, the starting point will be domestic animals, something all pupils are familiar with.

The teachers believe it is difficult to evaluate a contextualised approach to learning as it is difficult to keep track of individual pupils and to observe all the pupils. They feel that assessment is difficult and there would not be enough time to cover the whole syllabus. In terms of suitability, class size and time may be the main barriers to using the approach. Some teachers said they would need organisational skills to do more practical teaching, although one teacher described how she handles a visit to a sugar cane factory. She makes the children stand in a circle, the factory manager then explains what happens in the factory, following which the teacher encourages the pupils to ask questions. She then asks questions to the pupils to make sure they have understood what they have seen and heard. Three of the teachers (one male and two female), say their own agricultural knowledge is good, as they come from farming backgrounds. Two female teachers said that they themselves have no agricultural knowledge and that in science they must teach agriculture. In this case they teach in the classroom and often the pupils' knowledge of agriculture is far greater than their own.

### *2.2.9 Issues arising from School A*

The school is impressive to look at. It is clean and tidy and the school grounds are attractive and well kept. The school is very active and frequently classes of pupils were seen having lessons outside. Despite the sheer poverty these children live in, and the lack of resources at the school, they appear happy, enthusiastic and enjoy going to school. At this school there is a noticeable air of good teacher collegiality, which is further supported through observing the teachers working, particularly during the Friday afternoon cultural session (Photo 5).

This school has a very good relationship with the community, which (according to interviews) it is continually trying to improve. An Old Boys Association has recently been formed and they come to the school to talk to pupils. Past pupils also come and help in the school; at present they are giving extra tuition to class VII pupils to help them pass the district level exam. Previously the school was well known in sports and now past pupils come to the school to coach in sports to improve the school's position in local sports events. When the pupils are taken on outside trips, parents and community members come along to help look after the children. Teachers say that parents and community members should be involved in the school to deal with problems such as enrolment, and to follow pupils progress.

In terms of the curriculum, the teachers say that it is rigid and does not allow them to integrate subject areas. The main problems of the school, apart from a general lack of equipment and insufficient space, is a lack of parental support in terms of parents sending pupils to school without books or stationary. Other problems include lack of sufficient funds to improve the library and buy sports equipment. Free textbooks (for classes I to V) are supplied by the Government but often these do not arrive on time.

There are a number of problems to using practically based teaching methods, firstly time, as lessons are scheduled to take place in 40 minutes for classes IV and above. If school visits are arranged some distance from the school, not all of the pupils can pay for transport. Parents' concept of learning is generally that it only takes place in the classroom; so they do not encourage school visits or practical activities. Although education is free to all, it is still seen as a luxury. Because of the opportunity cost of education, parents will keep children at home either to work in the fields or look after younger brothers and sisters. Consequently many children are infrequent attendees and drop-outs which means that is difficult to keep continuity in teaching as different pupils miss different lessons at different times.

**Photo 5:** Practising for the 'cultural session' - School A

In terms of their training, teachers do not feel confident or adequately trained to enable them to use a contextualised process of teaching. At present they do not feel their training is relevant to what they are expected to teach; primary level teachers must teach all subjects, but their training is only in one or two subjects. They need further and recurrent training in all subject areas. This is even more important as curricula are revised, for which they receive no specific training in content or teaching methods to help them implement the revisions. In some subjects, namely mathematics, teachers find it difficult to keep up with the frequent changes in topics, methods etc., without regular in-service training. Teachers feel that regular training would motivate them more.

Contextualising teaching and learning is not knowingly carried out as a teaching and learning process at this school. Pupils diagrams and interviews indicated that they did not knowingly link what is learned at home with what is taught in the classroom. Teachers do attempt to relate out of school experience with classroom teaching, and they believe that a practical experience-based approach to teaching reflects in increased interest and involvement by pupils and responses to questions which are more meaningful. A number of factors are identified as constraining such an approach of contextualisation in teaching and learning practices. Primarily, teachers have never knowingly practised such a method because they do not know about the process of contextualising teaching and learning. The curriculum is rigid and does not allow for integration of subject areas. Teachers envisage that assessment would be difficult. Classroom organisational skills training would be a necessity. There are logistical reasons that would affect the method. The syllabus could not be covered using a contextualised approach due to this time factor. Large class sizes may also be a barrier. It was agreed, generally, that there is a good level of agricultural knowledge amongst teachers in this school.

## *2.3 An 'Average' school - School B*

### *2.3.1 The Community Environment*

The village is situated approximately 23 km East of Mysore, in Karnataka State, Southern India. In the village there are 520 families with an average of two to three children in a family. The total population is 3336 persons; 1828 males and 1508 females. 80% belong to the Vokkaliga caste (farming community) and 16% belong to the SC, the remainder belong to other castes. The literacy rate is estimated at around 20%.

Water facilities are available to everyone in the village and 155 houses have running water, 180 houses have electricity, and only 25 houses have toilet facilities. There are five public bore wells. There are two *anganwadis* (Early Childhood Care Centres), a government high school, government higher primary school and a private convent school. The village has no community centre so meetings are held in the village temples. There is no health centre and the nearest facilities are over 6 km distance from the village. The village has an Agricultural Co-operative Society (1500 members); Cauvery Grameena Bank, through which credit services are available; a post office; a veterinary centre; two flour mills and one rice mill; and, a women's welfare centre. Fifteen families in the village receive support under the governments Total Village Improvement Scheme, which provides monetary loans to buy such items as cattle, irrigation pumps, carts and ploughs. Eighty people receive old aged pensions from the government and ninety six women receive widow's pensions.

### *Agriculture*

Agriculture is the main livelihood in the village and agricultural practices are very traditional; wooden rather than iron ploughs are used and there are no tractors. More than half of the villagers own land but there are also a large number (300) of landless agricultural labourers. The village has 990 acres of cultivated land and some land is irrigated using water from the river Cauvery. Main crops grown are paddy, sugarcane, plantain, ragi, groundnut, coconut and mulberry. There are two seasons, July to December (rainy season) during which paddy and sugar cane are the main crops and February to May (dry season), during which paddy is the main crop. Irrigation allows for two rice crops a year to be grown.

### *School and Community Relations*

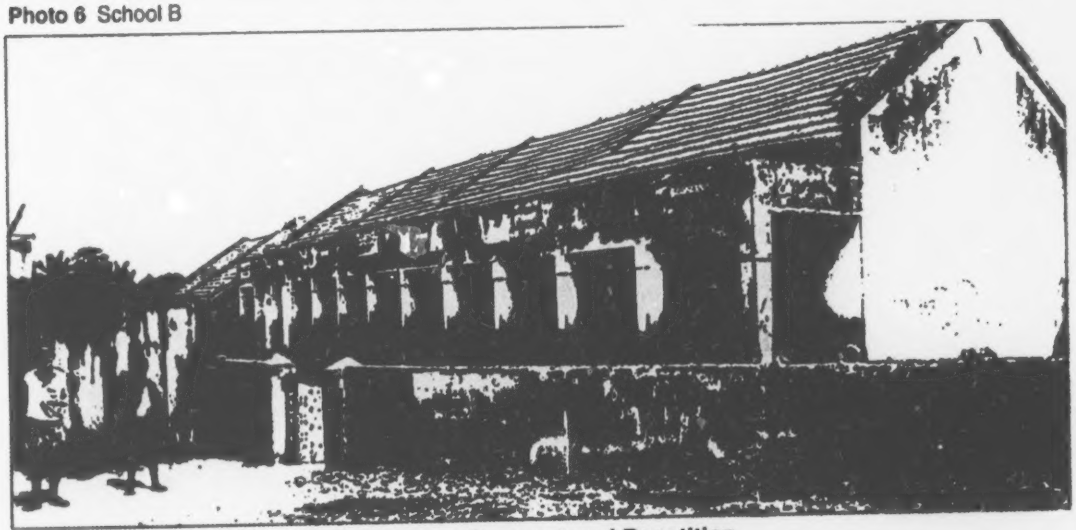
The parents felt that good relations should exist between the school and the community, but that this is the job of the village leaders. The School Betterment Committee (SBC) has around fifteen members, but most members do not attend the meetings despite persuasions and efforts by the headteacher. He had called a meeting of the SBC to arrange for community members and parents to attend a group discussion for this project; only on member turned up. Requests made to shift the shops in front of the school elsewhere have not yielded any results. Space available around the school has been lent to a private convent school and a non-school establishment (village accountant's office), when the same could have been given to the school.

The headteacher thinks that it is important to link school and the community and blames many of the problems at the school on the lack of co-operation from the community. He believes that until there is mutual co-operation from the community the school will not be able to function smoothly. The SBC has been asked repeatedly to supply a notice board for pupils to display their work but has not responded to this request. Although the school owns the land it is on, a high school has been established on the same ground and the high school pupils bully the primary school pupils and take over the playground. The authorities have been informed about the constraint on the school facilities, but nothing has been done to alleviate the problem. After school hours gamblers use the classroom balconies for playing cards. School premises are dirtied and toilets built by the school for use by children and staff are unusable because they have been vandalised by community members. Shrubs were planted in the school grounds by one of the high school teachers and the pupils planted saplings to develop a school garden, but these were uprooted by members of the community. The same teacher also built a fence round the school grounds, but this was also destroyed. This high school teacher is very angry and he has vowed to *'teach the people a lesson'*. The teacher belongs to the locality and lives in the village. Between the villagers there are disputes, and during one visit to the school the police had arrived in the village to intervene in an argument that had developed over water distribution for irrigation; the situation was very tense.

### *2.3.2 The School Environment*

School B Government Higher Primary School (Photo 6) was established in 1927 with classes I to IV. In 1950 classes V to VII were added. The school is near the centre of the village on the main road. Although the school buildings look to be in relatively good condition, teachers complain they have been badly built and two of the classrooms are unusable during the rainy season, because the roof leaks. In front of the school is a bus stop and the village accountant's office is being built close by. There are no trees and little greenery in the school grounds. The school has no perimeter fence apart from a small wall at the front of the school. Donkeys, cattle and people wander freely in and out of the school grounds. The high school pupils are often seen playing volleyball in the school's playground and pupils from a nearby convent school also come into the grounds. There are three main teaching blocks and a total of 6 classrooms. All of the rooms have bare white walls. In classes VI and VII there are benches for the pupils to sit on and in the other classes pupils must sit on the floor. The headteacher shares his office with class I pupils and in this room there are a few posters, charts or pupils' work on the walls. The school has no library, and books provided by the government are kept in a locked cupboard. Recently the school was supplied with some maps (of India and Karnataka state) and alphabet charts, which appear unused.

**Photo 6** School B



***Enrolment, Pupil Numbers, Attendance, Drop-out and Repetition***

There are 416 pupils enrolled in the school; 202 boys and 214 girls. Enrolments (not attendance) by class for 1996 are illustrated in Table 10. The majority of children (80%) in the catchment area are enrolled in the school, but a large number have not enrolled, or have dropped out. It is compulsory for all children to enrol in school at the age of five years. Once they have enrolled, their names must stay on the school register until they reach class III. Consequently out of more than 100 pupils who enrolled in class I, only 40% are regular attendees. Of the regular attendees the overall attendance rate is estimated at 80%.

**Table 10:** Pupil Numbers 1996 (School B)

| *Class* | *I* | *II* | *III* | *IV* | *V* | *VI* | *VII* |
|---|---|---|---|---|---|---|---|
| *Number of Pupils* | 47 | 49 | 96 | 51 | 65 | 57 | 47 |

Approximately 80% of pupils come from an agricultural background and there are periods of low attendance during peak times in the agricultural year. The busiest times are generally December to January during harvesting of paddy and land preparation, and May to June for the second harvest of paddy. Within a class there are no divisions according to ability. Drop-out is highest in class III, when pupils may stay at home to help in the fields. Repetition is about 10% and highest in classes V and VI. Pupils have to repeat if their attendance is poor.

***Assessment and Examinations***

Excepting class VII, which will have a district level public examination from this year, other classes have a mid term and annual school level examination. Classes I to IV are assessed through both oral and written tests. The headteacher is fully satisfied with the examination system.

### *2.3.3 The Teachers*

There are eight teachers, four men and four women, including the principal. There appears to be discord amongst teachers and the headteacher. Possible reasons for this situation could be that the headteacher is not local and he is from a higher caste (Brahmin). The headteacher has been at the school for two years following a promotion and transfer to the school. He lives in Mysore and commutes to the school every day. The headteacher is an unhappy man. Since being posted to this school he has not been able to take full charge as one of the teachers, who for a short time was the acting headteacher, is aggrieved that he was not promoted to the position of headteacher. Presently the headteacher holds only the charge of finance. Two elder male members of staff who live in the village, resent working under the new headteacher and do not cooperate or work with him. The situation has been reported to the authorities and so far no action has been taken to improve the situation. The headteacher says that teachers do not cooperate and gave one example where the teacher of class I refused to combine classes I and II to make more classroom space (and a separate office for the headmaster). It was observed that this teacher was very good; she enjoys teaching but says that there are not enough resources to effectively combine classes I and II. Teacher motivation is very low although the headteacher is unable to identify the cause. A male teacher admitted that he did not have the motivation to work well as he has been overlooked in promotions (he does not fulfil the requirements as he has not completed pre-service teacher training). Interviews revealed that there is little communication between the headteacher and his staff, and through observation there appears to be little teacher collegiality. The headteacher states that staff meetings are held five to six times a year. They are usually held to discuss a particular item, for example organising a function, national days and exams. The headteacher says that teachers just sit and listen at these meetings, they never discuss anything or bring in their own opinions.

Only one teacher is untrained, the others have TCH qualifications and two teachers are studying for MA's. The teachers are well experienced and two have more than fifteen years teaching experience. All of the teachers have been at the school for at least two years. The amount of in-service training these teachers have had is minimal, and some have had no in-service training in the past four years. Two teachers have had SOPT training (five days) which they say is useful for ideas on the production of teaching aids (the training is based on the use of maths and science kits but there are no kits in the school). Three teachers have had in-service English language training. Two teachers have been trained to run Scouts and Guide groups; however, there are no groups in the area so their training has never been put into practice. Outside school hours, teachers try and visit parents whose children do not attend school. The teachers have, in the past, supported pupils if there have been specific reasons for them not attending school. For example, when one pupil dropped out of school because he had no uniform, the teachers clubbed together and bought him a uniform. If the teachers identify a child that needs something, they will tell the others and together they will decide how they may help.

The poor teacher collegiality in the school is emphasised when teachers say one of their main problems is that they cannot request to transfer to another school. They feel that teachers should have the opportunity to transfer schools every three years and one teacher said *'people with the right connections work in Mysore which means that we have little chance of ever being transferred there'*. The teachers do not like travelling to and from Mysore. One stated *'if I was given a job in my home town (Mysore), I would be able to teach better'*. The teachers say that because they work in rural primary schools they have no exposure to new ideas. Although they visit schools in the area they believe this school is one of the best. One of the longer serving teachers said that he had visited school A and that it was only slightly better than this school because, *'it has been given 'model school' status by the government and so it gets more equipment'*.

Pupils and teachers were asked what they consider to be the characteristics of a good teacher (Table 11). Teachers' responses in this school are similar to school A, though not as comprehensive. Pupils were not keen to respond to this question.

**Table 11:** What are the characteristics of a good teacher? (School B)

| *Pupils' response* | *Teachers' response* |
|---|---|
| *A teacher should:*<br>• teach well<br>• not beat the pupils<br>• teach songs | *A teacher should:*<br>• be punctual<br>• be able to relate to the pupils<br>• cooperate with parents and the community<br>• plan lessons before teaching<br>• have a good personality<br>• monitor individual pupil's learning<br>• be knowledgeable about the subject<br>• be 'service minded' - an attitude to help people<br>• have a sense of humour |

### 2.3.4 The Learners

The headteacher says that generally pupils in the school have no interest in learning. During the interviews pupils were quite shy and found it difficult to understand some of the questions. Class 5 was interviewed first as it was assumed they would understand the questions better and give a wider variety of responses than class IV pupils. Class IV pupils however, were more enthusiastic and ready to answer questions and they appeared bolder than the class 5 pupils. According to class teachers, the brightest pupils in the class volunteered for the activities, but based on observation from the mapping diagrams the overall standard of these groups of pupils was poor.

It was difficult for pupils to identify the differences or relations between learning at home and at school. One pupil said they learn songs at home and at school. Another said that *'if I learn from books I forget, if my parents show me how to do it on the farm I remember'*. One boy then said that when a teacher is talking specifically about agriculture his parents have told him *'what your teacher tells you in school is false - we teach you better'*. Once agriculture came into the discussion the boys livened up and were very quick to answer questions. On one pupil's mapping diagram he had written he works in the field. On inquiring further he went into detail about growing tomatoes, including the types of fertiliser and pesticides they use. Another boy said *'we now use hybrid varieties, so pests are not a problem!'* and a girl said *'in science we learnt about soil erosion, at home I told my parents that they should use plants and roots when they make bunds, to decrease the risk of soil erosion'.*

When pupils were asked whether they talk to each other about what they are studying, the response was that if they miss a class they will ask their friends to show what was studied in the lesson. Pupils then said that *'learning from the teacher is important'*, compared to learning from friends. The most liked subject areas were Kannada - *'because it is easy'*, and maths - *'I can use it when I go to the shops'*. In response to the question 'why do children go to school', most pupils in unison recited in Kannada *'to acquire "vidya" (knowledge) and "buddhi" (wisdom) and become a good person'* (Table 12). Reasons for not going to school included *'parents keep them at home to fish, graze sheep and watch cattle'* and *'they give lame excuses for not attending school, then they steal coconuts and sugar cane. They enjoy fishing and looking after the cows'*. Children were reluctant to say what they disliked about school and after much probing they said 'bullying'. Nor would they say what they liked about school, the response was plainly *'we like school lessons'*. Possibly pupils still thought that the interview was some type of assessment, or maybe they did not want to say anything unpleasant about the school.

**Table 12:** Why do some children go to school and others don't? (School B)

| *Why do children go to school?* | *Why do some children not go to school?* |
|---|---|
| • learn lessons<br>• acquire knowledge<br>• learn many things<br>• learn about 'good' | • not interested in reading and writing<br>• afraid of being punished<br>• fear of being asked questions |
| ◊ learn to read<br>◊ acquire knowledge and wisdom<br>◊ get a job | ◊ parents prevent them from going to school<br>◊ not interested in school<br>◊ afraid of being punished if they have not done their homework |

**Table 13:** What children like and dislike about school (School B)

| *What do you like about school?* | *What do you dislike about school?* |
|---|---|
| • lessons<br>◊ no response | • nothing<br>◊ being bullied by the high school students<br>◊ high school pupils tease the primary school teachers when we're singing<br>◊ high school disturbs our classes |

(• indicates response from class 5; ◊ indicates response from class 4)

### Pupils activities at home and school

Children are not used to drawing. They are not familiar with free drawing or pictorial representation of familiar actives (e.g. reading, cleaning, farming, cattle grazing etc.). After drawing a school and home for the mapping activity, they wrote the activities they did in (poor) Kannada, their first language

(Figure 4). Their writing was full of spelling mistakes and the sentence constructions were faulty. Similar to School A, girls are primarily responsible for domestic chores at home and school. Whilst class 4 pupils were describing their mapping diagrams, one of the girls pointed to one of the boys saying *'Sir, he washes pots too but he is not telling you!'*. Apparently washing dishes is a girl's job and where boys do it at home they do not like to admit it, especially before girls. The boys tend to be responsible for agricultural activities. One boy wrote he planted trees at the school; he then said *'but they have all disappeared'*. Table 14 illustrates the frequency of occurrence of daily activities by class 5 and class 4 pupils.

**Figure 4: pupil's mapping diagram - School B**

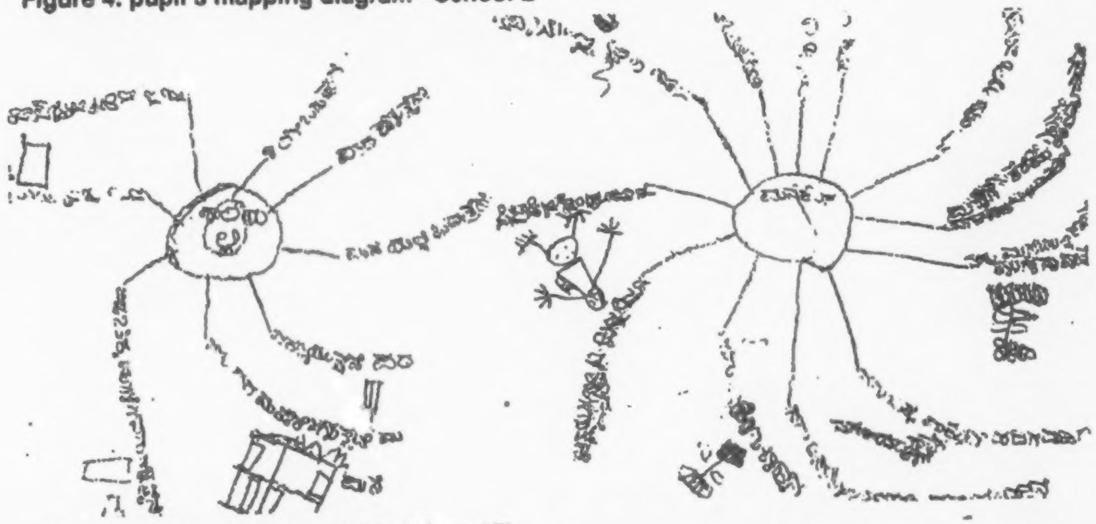


**Table 14**: Activities at home and school (School B)
(summary of mapping diagrams by 12 pupils from class 5, by frequency of occurrence of each avitivity in the mapping diagrams)

| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
|---|---|---|---|---|---|
| read and write | 3 | 2 | read and write | 3 | 3 |
| fetch water | 2 | 2 | water plants | 1 | 1 |
| clean/sweep house | 1 | | play | 2 | 3 |
| herd cattle/goats/sheep | 1 | 1 | listen to teacher | | 1 |
| wash pots | | 2 | clean classroom | 1 | 3 |
| throw away rubbish | 1 | | | | |
| go to shop | | 1 | | | |
| play | | 1 | | | |
| water plants | 1 | 1 | | | |
| water vegetables (chilli, tomato | 2 | | | | |
| cook | | 1 | | | |
| transplant tomatoes | | 1 | | | |

(summary of mapping diagrams by 12 pupils from class 4, by frequency of occurrence of each avitivity in the mapping diagrams)

| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
|---|---|---|---|---|---|
| read and write | 2 | 2 | read and write | 3 | 3 |
| fetch water | 3 | 3 | water plants | | |
| wash pots | 1 | 2 | play | 3 | 2 |
| prepare stove for lighting | | 2 | listen to teacher | | |
| watch TV | | 1 | clean classroom | | 3 |
| play | 2 | 2 | clean playground | 2 | 1 |
| cook | | 1 | plant trees | 2 | 1 |
| sleep | 1 | | learn multiplication tables | | 1 |
| bathe (daily) | 1 | | | | |
| eat | 1 | | | | |
| plant ragi | | 1 | | | |
| works in paddy fields | 1 | | | | |
| dig (in field) | 2 | | | | |
| work in mulberry fields | 2 | | | | |

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### 2.3.5 Teaching Learning Processes

The headteacher believes that the curriculum is only partially relevant to pupils lives, though he has never seen the curriculum or syllabus; his assumption is from examples in the prescribed text books. The headteacher believes the curriculum could be made more relevant by including more agricultural examples and learning skills of local vocations, e.g. agriculture, carpentry, etc. Under socially useful productive work (SUPW) there are activities related to school cleanliness, growing plants, but not any vocational skill training. The headteacher appeared to be thinking about agriculture as a subject rather than its use in contextualising teaching and learning. Teachers initially assumed a defensive posture when they were asked whether they found the curriculum relevant to the lives of the children and teacher training helpful in carrying out their tasks. To both these questions their replies were affirmative. It was only after further probing (why do you think so?, are there any parts which you think are not relevant?, can you give examples?, do you think expressing decimal numbers in base 5 (a topic for class V in arithmetic) is very relevant?), that they said that the curriculum on the whole was not very relevant.

The headteacher identified a number of problems at the school, but he was unable to identify any strengths. He believes that his school is no different to others in the area, though he has had no contact with any other schools. Teachers do not integrate subject areas, though they may verbally relate one subject area to another, for example if discussing population they may talk about maths and social science. Generally pupils do not work in groups as teachers say the time allocation per lesson is not sufficient to enable them do this. One teacher said that she sometimes gives an assignment on one day, the following day the pupils work in groups and ask questions amongst themselves on the given assignment. Classes V, VI and VII may work in groups when a teacher is absent. Project work is not given and school teaching and learning rarely takes place outside the classroom; classes are never taken outside to work. The response to '*do you encourage your pupils to ask questions in class?*' by one teacher was '*pupils are not intelligent enough to ask questions*'. Another said that they ask questions when they don't understand something. One teacher said pupils are very bold, in contrast to this another teacher said that if he tells his pupils they will be discussing work in class the following day they will not turn up to the lesson. Pupils responses (Table 12) support the latter remark and also pupils give 'pupils ask questions and give examples' a low rank in the matrix activity (Table 15). According to the teacher interviews usually pupils only ask questions when they do not understand something; they rarely ask inquiring, exploratory questions. As a method of learning it is ranked very low by pupils, possibly because their level of achievement is low and their motivation levels are low in this school. 'Teacher explains, asks questions and gives examples' is ranked high as a method of learning by class IV pupils. At this level the pupils are not left to work on their own. Class V ranked this quite low, they are often left to work on their own.

The matrix ranking activity was carried out with two groups of teachers (Table 15). All of the teachers are trained, and this training has shown through in their rankings. For example a high rank is given to 'pupils learn by doing'. Teachers said practical activities are rarely carried out in the school. Pupils teaching each other is given a high rank by teachers. This method of learning is through group work where a high achieving pupil is the leader, and the lower achievers look to them for guidance. In this school this generally takes place outside school hours. 'Teacher explains, asks questions and gives examples' is ranked very low by the teachers, possibly a result of their training, as in practice this method of teaching is predominant in the lower classes in this school. Teachers do not consider 'pupils ask questions and give examples' as an effective method of learning, because pupils have low achievement levels and low levels of motivation.

Teachers perceive that pupils are not able to ask questions or give examples and so they do not wish to spend their teaching time trying to get pupils to do this. An arithmetic lesson was observed in which the teaching was mechanical and bookish. There was little participation by pupils in learning other than repetition of verbal instructions without understanding. There was no evidence of understanding the process of the problem (taking the lowest common multiplier), or why it was necessary. Pupils did not have the concept of fractions, as the teacher mechanically emphasised the rules of adding and subtracting fractions without checking the pupils' understanding. The teacher stood in front of the class away from the pupils and proceeded to shout at them. They responded automatically by shouting back in unison. Pupils then copy what is written on the board, whether they have understood the concepts or not. This example also illustrates why pupils may rank 'pupils repeat or recite' highly.

**Table 15:** Methods of learning - matrix ranking activity (School B)

| Rank | Teachers' response (group 1) |
|---|---|
| 1 | • pupils learn by doing |
| 2 | • pupils repeat or recite |
| 3 | • pupils teach each other |
| 4 | • pupils read from text books |
| 5 | • teacher demonstrates |
| 6 | • teacher punishes pupils |
| 6 | • pupils write |
| 6 | • teacher explains, asks questions and gives examples |
| 6 | • pupils ask questions and give examples |
| 7 | • teacher reads from text books |

| Rank | Teachers' response (Group 2) |
|---|---|
| 1 | • pupils 'learn by doing' |
| 2 | • teacher demonstrates |
| 3 | • pupils teach each other |
| 4 | • pupils read from text books |
| 5 | • pupils repeat or recite |
| 6 | • pupils write |
| 7 | • teacher explains, asks questions and gives examples |
| 7 | • pupils ask questions and give examples |
| 7 | • teacher reads from text books |
| * | • teacher punishes pupils |

| Rank | Pupils' response (grade 4) |
|---|---|
| 1 | • teacher demonstrates |
| 2 | • pupils 'learn by doing' |
| 2 | • pupils repeat or recite |
| 3 | • teacher explains, asks questions and gives examples |
| 3 | • pupils write |
| 4 | • pupils read from text books |
| 5 | • teacher reads from text books |
| 6 | • pupils ask questions and give examples |
| 7 | • pupils teach each other |
| * | • teacher punishes pupils |

| Rank | Pupils' response (Grade 5) |
|---|---|
| 1 | • teacher demonstrates |
| 1 | • pupils 'learn by doing' |
| 2 | • pupils teach each other |
| 3 | • pupils repeat or recite |
| 3 | • pupils write |
| 4 | • pupils read from text books |
| 5 | • teacher explains, asks questions and gives examples |
| 6 | • pupils ask questions and give examples |
| 7 | • teacher reads from text books |
| * | • teacher punishes pupils |

*rank score = 0

In both pupils' and teachers' matrix ranking, 'teacher reading from textbooks' is consistently ranked lower than 'pupils reading form text books'. The activity itself may not be an effective method of learning, but given a choice between the teacher or pupils doing it, the preference is towards the pupil doing the activity. A classroom observation of a Kannada lesson illustrates this point. The teacher started the lesson by asking the pupils a few questions to motivate them. She then read the text and the pupils listened. After a few minutes she asked a pupil to volunteer to read the text. A number of pupils, one after the other, stood at the front of the class to read the text. The teacher then attempted to develop skills of listening and reading with comprehension.

**Photo 7: Kannada language lesson (School B)**

'Pupils learn by doing', received a high rank by teachers and pupils. During classroom observations it was noted that this method of teaching was, to a certain extent, taking place in the classroom. A Kannada language lesson was observed in class II (Photo 7). The room was quite cramped and did not allow the teacher to walk easily between the pupils. A poem had been written on the blackboard which the pupils were to follow and sing. A pupil was then asked to come to the front of the room and lead the rest of the class in singing the poem by reading and pointing at the words on the board. The teacher moved round the children and helped them to pronounce words correctly. There was good participatory learning in a difficult learning context. In a class IV science lesson on sense organs, the teacher asked a pupil to walk towards a door and asked him whether the task was difficult. She then blindfolded the pupil and asked him to repeat the same task. 'Now do you find it difficult?'. All of the pupils were laughing and paying attention to the lesson. The teacher has succeeded in arousing the interest of the children (Photo 8). Pupils may rank 'pupils learn by doing' high as in this case it may be interpreted as doing homework; reading and writing is a frequent activity in the mapping diagrams. In the school there is no project or group work. 'Pupils write' receives a relatively high rank from both class IV and V. This is evident from the mapping activity, in which pupils, despite being asked to draw pictures to illustrate activities, wrote (poorly) the activities they did.

'Pupils teach each other' is ranked low (7th rank) by class 4 and high (2nd rank) by class 5. There is no organised group work in class 4 and below. In classes V to VII, group work is undertaken outside lesson time and when a teacher is absent. 'Pupils repeat or recite' is a common practice in this school and is ranked highly by the pupils. The teachers however ranked this low as in their training this is not a taught method of teaching. Pupils gave 'teacher demonstrates' and 'pupils learn by doing' high rankings. Here the pupils appear to have linked these two activities. They may interpret 'teacher demonstrates' as the teacher talking to them, showing them how to read and write and illustrating methods for working out sums, because this demonstrative teacher-centred approach is used in the school. A social science lesson that was observed, illustrates this point. The children were being taught arithmetic but this was changed by the teacher to a social science lesson after we entered the classroom. One pupil was sent to the headmaster's office to fetch the map of India. The teacher then proceeded to hold the map up, rather than fixing it to the wall. We got the impression that this was the first time the map had ever been used as the teacher appeared nervous and there was nowhere to hang the map. The teacher stood at the front of the class and pointed to places on the map, he did not ask the pupils to participate and identify places on the map. The teacher stood at classroom in front of the pupils, it is unlikely that there is ever any pupil participation in the lesson.

### *2.3.6 The Home environment*

Ten community members, five men and five women, arrived at the school to be interviewed. Eight members have children at the school. Three parents were illiterate and four parents had education between classes III and V. Two community members appeared very enlightened and it was assumed that they were probably educated to college level. One of these members is on the SBC and the other has been nominated to stand as an elected member of VEC. Both of these members are involved in agriculture, one owning a fertiliser shop, the other is a farmer/agricultural contractor. All of the parents are engaged in some kind of farming practice.

### *Parents' role in schooling*

Most of these parents are not involved in school activities and they only visit the school when they take or collect their children or whenever they are sent for by the school. The illiterate parents say that they are fully occupied with their own work and find it difficult to make time to be involved with school activities. They agree that it is important for them to be involved in their children's schooling but are unable to say why they think this. Generally they are satisfied with their children's schooling. Pupils drawings from the mapping activity revealed that few of them could write basic Kannada words so how can parents be satisfied with such a situation?. In response to this question the parents said that their own educational levels were very low so they *are 'not in a position to judge the level of learning of their children'*. All they know is that at school their children should acquire *'wisdom and knowledge and become a good person'*.

Photo 8 Class IV science lesson 'the senses'

Parents say that their children do talk about what they learn in school at home, such as the subjects they learn, but they could not illustrate whether or not they learnt anything from their children. After giving them an example (on the correct way to cook rice to get the maximum nutrition from it), they said there is something to learn from their children. They said children ask them questions and they felt happy about it, but they could not give examples of the kinds of questions or how they respond to them. Parents feel it is acceptable for children to talk about what they do at home and they think children learn better when their home experiences are related to what they learn in school. Again they are unable to give examples.

### *2.3.7 Contextualising teaching and learning*

The headteacher agreed that learning is more effective when what is already experienced by the children out of school is linked to what they are taught in school. He said it is important that teachers relate children's experiences to the subject they are studying. In the case of the school children their agricultural experience should be used. Only a couple of teachers may be doing this but generally it is not done in the school. Asked whether he did it, he said he did not know how to use these experiences in the teaching and learning process and he had no training in using such methods. One group of teachers could not quite grasp the concept of drawing upon pupils' experience in aiding the effectiveness and meaning of teaching a new subject, or area within a subject. They said it is very difficult to relate a child's background to what is taught in the classroom. Some examples were given; for example, in social studies there is a lesson about family relations, so teachers ask pupils about their families. The teachers have obviously never tried an approach which draws upon pupils own experience as they could give no responses to questions except, *'yes, this approach is more satisfying than the traditional "chalk and talk" approach'.* Vague reasons were given on the benefits of this type of approach such as *'children understand better as they know it is something that can be used in practice. If it is related to in practice, they can make connections with textbooks'.*

### *2.3.8 Agriculture in contextualising teaching and learning*

There is no direct evidence from teachers at the school to suggest that they are using a contextualised approach to teaching and learning. Pupils gave a number of examples where their agricultural experience had been brought into lesson, or where they had learnt something at school that they could use at home such as *'in science we learnt about soil erosion. At home I told my parents that they should use plants and roots when they make bunds, to decrease the risk of soil erosion'.* But the examples are few and do not suggest that teachers brought this experience into the lesson deliberately. At this school, once agriculture was mentioned pupils were keen to describe their experiences at home, but they could not relate this to learning in school. One pupil actually said that she remembers agricultural practices better if her parents show her on the farm, rather than learning from a textbook.

### *2.3.9 Issues arising from school B*

There appear to be many underlying problems at this school that may emanate from the poor relationships between staff. Teachers in the school are unhappy and frustrated that the community and in particular the village leaders, parents and SBC members, are non-cooperative and even hostile towards the school in particular, and the education of their children in general. When pupils' progress is not up to standard, the teachers send for the parents. They usually come to the school (women will not come by themselves); however, if any pressure is put on the parents to help their children they will withdraw them from school. Although parents may agree that education is important, in classes II and III pupils are often removed from the school by parents, to help in the home or on the farm whilst their parents go to work elsewhere. Teachers say that parents do not cooperate in ensuring that children attend school as during harvest times and festivals, there are more children outside than in the classroom. Parents send children to school without books, writing materials or school uniforms as the majority of parents are very poor. Parents do not have time to supervise their children's school work at home. Long periods of absenteeism by pupils is difficult for teachers to accommodate in the classroom.

Initially the problems identified by teachers relate to resources such as lack of accommodation for teachers, rather the problems they may face in their teaching and learning practices. Six of the teachers travel from Mysore daily and say that they would move to the village if there was suitable accommodation. Regular in-service training is an area of support consistently requested by teachers, specifically technical and content training in difficult subject areas (e.g. social science and geography). Logistics in terms of class size and time are an important issue where new methods place emphasis on child-centred activities, as quoted by a teacher: *'forty minutes is not long enough to teach like this, if we do we will not be able to cover the curriculum'.* Teachers say that they do not have the teaching aids that were recommended to them in teacher training. The training they had is not relevant to the child centred approach used now and there are few training opportunities for them to update previous training. They feel they do not have sufficient training to implement the revised curriculum and there are areas in it that they find difficult to teach. They have no specific training in innovative methodologies. A class I teacher expresses her problem of teaching higher classes because of insufficient teacher numbers. She is trained to teach classes I to III, but must also teach some classes up to grade VII, which she does not feel competent to do. Teachers do not enjoy teaching a subject area that is unknown to them. Art and SUPS must be taught by all teachers but they say they do not have the correct skills to teach these areas. On further questioning it was discovered that teachers did not know the objectives of these subjects and have never seen a copy of the syllabus or ever used a teachers' guide.

Based on observations from mapping diagrams, the overall standard of pupils appeared to be very low. An SBC member said that the level of teaching and learning in the school was very low and through his own observations, he had noticed that even children in classes V and VI did not know how to write the alphabet. Parents appear to be unaware of the poor quality of schooling their children are receiving, possibly because the majority are themselves illiterate, especially the mothers. There is little evidence to suggest that teachers try to relate teaching and learning to pupils' experiences and backgrounds. There was evidence that teachers try to relate some learning to real life (for example a grade IV science lesson on the senses) but generally the approach in this school is "chalk and talk". Classrooms were very bare and few teaching aids and resources were evident in the school. Although agriculture is interwoven with the lives of most children in this school, they appear to be very shy in admitting that they do household and farm work out of school hours. These activities are believed to be lowly tasks, especially grazing livestock, which only the uneducated do. If pupils think this way about agriculture, it could be a constraint to using agricultural experience in a contextualised approach to teaching and learning. Teachers generally agreed the innovation may be useful; however, they believe that it is difficult to relate to or use pupils' agricultural experience in their teaching practices because of constraints in the curriculum, lesson times and exam system.

## 3 Findings from the Country Study

India is a vast country with great variations and divides in culture, language, caste, religion and gender both between and within states. The immense population, the majority of whom live in rural areas, uneven development, and striking differences between the urban and rural populations, create an infinite and ever changing task for the country's development of education. Although enrolment is high, drop-out rates are also high and achievement levels are low. Nearly half of the population is illiterate, and the large disparity between sexes results in over 60% of adult illiterates being female.

India has declared that it will provide Education for All by the year 2000. This in itself is a huge undertaking, and will involve expansion of early childhood care and development, universalisation of elementary education, reduction in literacy, and provision of opportunities to maintain, use and upgrade education. Improving the content and process of education should be a high priority, *'to better relate to the environment, people's culture and with their living and working conditions, thereby enhancing their ability to learn and cope with the problems of livelihood and environment'*. A recent report by the National Advisory Committee (1993), however, looks at the 'burden of learning' in the education system and the main problems associated with it, namely the emphasis on an education to gain elite qualifications, rather than a competence for doing useful things in life. This report states that *'both the teacher and the child have lost the sense of joy in being involved in an educational process. Teaching and learning have both become a chore for a great number of teachers and children. ... the majority of our school-going children are made to view learning at school as a boring, even unpleasant and bitter experience'*. Competency levels in reading, writing and numeracy of primary school children are estimated to be very low; at most only 30% of children have adequate competencies in these areas. Undue importance has been given to 'memory', instead of developing 'thinking' capabilities. To be effective, rural primary schools should equip the students to face the realities of the environment in which they live, and this is not being achieved in the current education system.

Teachers, parents and pupils all agreed that learning is easier when out of school experience is used and related to what is taught in school through the formal curriculum. They say it helps them understand things better, apply knowledge in practical daily life situations and see the relationship between knowledge from school and real life situations. Teachers confess they don't practice this pedagogy for a number of reasons. Teachers are generally unhappy with the training they received and feel that more support in this area would enable them to try out innovative teaching methods such as contextualising teaching and learning. They do not have the necessary skills to relate school knowledge to the daily life experiences of pupils because this was not covered in their training. At present schools have almost no input in curriculum development as responsibility is at state level. The curriculum is not relevant to the lives of the pupils, and there are many teaching-learning areas that cannot be related to practical, concrete real-life situations. The majority of teachers feel they can do little to improve their teaching practices, considering the lack of facilities and harsh conditions they work under. The rigid structure of the timetable, pressure on them to "cover" the curriculum according to a prescribed plan and the narrow requirements of the examination system allows them no flexibility to adopt innovative teaching methods. Teachers find it easier and feel more secure if they teach through books, which does not require great effort or creative, imaginative planning of learning experiences necessary for innovative teaching.

The belief that knowledge is gained by reading books and that it has very little to do with work or experience seems fixed in the minds of many parents, and is transferred to children also. Teachers feel answerable to parents, and presenting them with good exam marks will satisfy them; teachers and schools are held accountable through reference to exam results. The acquisition of such knowledge, measured through examination results, reinforces the belief that the concern of the school is to transmit knowledge to children in such a way that they can assimilate and reproduce it in the examinations. The curriculum and textbooks are essentially knowledge centred, with occasional reference to activities of a practical nature.

There is a lack of motivation and accountability amongst many teachers, especially in rural schools where there is limited scope and opportunity for professional improvements. In rural areas there is very little opportunity of recognition or appreciation of good, innovative work by these teachers.

Regular monitoring and training, they believe, would encourage their professional development and increase motivation of themselves and their pupils. In terms of initial impressions of the two schools, there was a distinct difference. School A was well maintained and attractive to look at. On the other hand, school B was hardly recognisable as a school from the outside as it had no boundary and appeared run-down and neglected. The atmosphere within in the two schools again was noticeably different. Pupils appeared happy and enthusiastic in school A, in school B they were passive and shy. Even from this small case study it is evident that co-operation between the headteacher, teachers, and community members is vital in forming a supportive learning environment for the pupil. The fieldwork illustrated that teachers', parents', community members' and pupils' perceptions of education and their views on knowledge are important factors in using a contextualised approach to teaching and learning. Their perceptions of agriculture are especially important if such an approach were to use agricultural experience. The role of a good teacher, invariably, is of one who is knowledgeable and a repository of information. Learning is also seen as something done out of a book and transferred to an exam paper. The desperately low competency rates in basic subjects illustrates a need for change in the education system. The community should play an important role in changing parental perceptions of education, and contextualising the process could be an important approach to achieving these aims of developing 'thinking' rather than 'memory' capabilities, along with strengthening linkages between the learning environments of school, home and community.

# ETHIOPIA

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# 1 Education in Ethiopia

## *1.1 Background to the country*

Ethiopia is a large country with two major geographical regions: the highlands and lowlands. The climate varies, depending on altitude, and ranges from desert to sub-tropical and temperate. Ethiopia is one of the least developed countries in the world, where an estimated 65% of the population live below the absolute poverty level. The population of the country is estimated at around 50 million people and the majority live in rural areas. Agriculture is the main livelihood of most of the rural population.

Ethiopia has experienced many changes and reforms in its education system over the past few decades. In the 1970's (post revolution) the education system was reformed along the line of a socialist general education which followed a polytechnic approach and was intended to produce 'socialist citizens with all-round personalities'. The general aims of education were: education for production; education for socialist consciousness; and, education for scientific inquiry. During this period a trial programme of a general polytechnic curriculum took place in 70 schools. It aimed to introduce new teaching-learning strategies which much more closely linked the classroom to the world of work. All subjects were supposed to give scope for the development of practical skills and positive attitudes towards work.

Environmental science, a subject in grades 1-3 of this trial curriculum, took a unified approach to culture and the environment and stressed problem-solving methods. Even the subject mathematics in the trial curriculum aimed to link the "culture of mathematics" to the learner's environment, stressing that there are mathematical roots in Ethiopia in the traditional tasks of the learners' forefathers. For example, construction of a *tukul*[1] needs knowledge about circles, cones and right angles. Carpentry and knitting require special knowledge about symmetry. The mathematics teaching-learning strategy suggested using fruits, stones or clay balls to support the introduction of set theory and the notion of number, and using an orange to demonstrate fractions. Above all, it was expected that the school would interact with its community: influencing it and being supported by it. These community schools were seen everywhere and were recognised by their gardens and farms, their cultural exhibitions, their community improvement activities and the real participation of elders on school management committees (Institute of Curriculum Development and Research [ICDR], 1993).

Despite the apparent success of the polytechnic curriculum the pilot programme was abandoned late in the 1980's. In the late 1970's school pedagogical centres (SPC) were established in each district and soon after SPCs were set-up in all schools to support the classroom teaching and learning process. The SPC was to enable teachers to prepare *'prototype teaching aids- as much as possible from locally available materials - giving short-term training to teachers and making informal studies of the awraja (local) environment and culture as a basis for adapting the curriculum, in social science in particular, to the locality.'* (ICDR, 1993).

## *1.2 Recent Educational Policy Changes*

In the past two decades there has been a tremendous increase in pupil enrolments, numbers of teachers, and numbers of schools. The enrolment in primary education was 859,800 in 1974 and grew at an annual rate of 8% to 2,855,846 in 1989, whilst the growth rate in numbers of teachers and schools grew by an estimated 9.5% and 8.5% respectively (Ministry of Education, 1989). The increase in the quantitative aspects of the system have been to the detriment of the quality of education, which has declined and sustained a pronounced fall in the past two decades. This is primarily due to the scarcity of instructional materials, facilities, and decline in teacher training. The curriculum lacked relevance with no clearly defined objectives and instruction concentrated more on theoretical knowledge with little connection to daily life. The approach also had a high tendency towards rote learning which did not prepare the young for living in the community.

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[1] *traditional house with conical thatched roof*

In 1991 the Transitional Government of Ethiopia was established. The education sector strategy (1994) states that *'in the last 30 years the objective and relevance of education in Ethiopia has become questionable'* and that *'the impact of modem education on the day to day life of the society at large has been negligible.'* The strategy identifies major problems in the education system including the following:

- only a small section of the population has individually benefited from the education system, as the vast majority had no access to the system due to the inadequate distribution and the small number of schools in the country;
- the participation rate at all levels was very low with disproportionately low female representation;
- the few schools available were mainly located in urban and other areas of easy accessibility.

Since the establishment of the Transitional Government, Ethiopia has been going through many economic, political and social changes. In education, the MOE identified the following major policy goals:

- to increase educational access, especially for rural children and girls, at the primary level (equity and quantity);
- to increase the relevance of schooling to children's lives and prospects;
- to provide diversified skills training and vocational education;
- to place emphasis on environmental issues, addressed through basic science instruction;
- to develop decentralised educational delivery systems emphasising the *woreda*[2] and village levels.

The primary school participation rate (1995) was about 22% and there was a high demand to raise this figure in order to realise the economic and social benefits associated with education. In Ethiopia, where about 80-85% of the population is involved in the agricultural sector, this demands a concomitant investment in basic education[3] in order to maximise gains from the introduction of new agricultural technologies, for improved farming methods and increased productivity. The current trend in Ethiopia's economic development also places rural development strategy as its focal point for meeting the community's basic needs.

### *The new primary curriculum*

This strategy outlined an objective to provide good quality primary education with an ultimate aim of achieving universal primary education over a period of 20 years. The primary education system shall be from grades 1-8 subdivided into two sections of basic (1-4) and general (5-8) education. Following this strategy new curricula were introduced in 1994. First pilot studies of the new curriculum started in 1994/95 in grades 1 and 5 in 110 schools. The following year the new curriculum was implemented throughout the country after an evaluation and improvement process, based on results from pilot schools. In the second year (1995/96) grades 2 and 6 were piloted, in the third year grades 3 and 7 (1996/97), and in the fourth year (1997/98) grades 4 and 8 are to be piloted. Following evaluation in 1998/99 it is intended that the new curriculum will be implemented nation-wide in grades 1-8. During the fieldwork (1996) the primary school curriculum was being implemented nation-wide in grades 1,2, 5 and 6.

The outline curriculum is set at National level by the MOE which also gives outlines for the syllabus in each subject area. Responsibility has been devolved to regional level for development of text books and teachers' guides. Supplementary material, for example science experiment guides, are also developed at regional level. Previously the language of instruction was Amharic, the national language. Following the transition, autonomy was given to regional governments to decide on the language of instruction in primary schools. This is likely to have many long-term implications on the teaching and learning process, especially in the production of teaching materials, textbooks and teacher training.

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[2] district

[3] basic education in Ethiopia refers to the first four years of formal (primary) schooling

## 1.3 *Education in Oromia Region*

According to Oromia Education Bureau Short Term Plan (1995-2000), issued in 1995, out of the estimated 8 million school age children in the country (about 3.9 million are in Oromia region), only about 2.3 million are enrolled. Of these, 0.8 million were estimated to be in Oromia region.

Oromia region has developed instructional materials in the new curriculum trial programme . Many of these materials have areas which specifically use agricultural experience and relate to the home environment of pupils, for example:
*Grade 5: Oromo Language:* there are passages on fruit and vegetables; poultry; utilisation of rivers (irrigation); bee-keeping; personal and environmental sanitation; and, natural resources.
*Grade 3: Science:* animal and plant reproduction; conservation of natural resources; protection of the forest and wild animals.
*Grade 5: Social Studies:* Agriculture - types of agriculture, and methods of farming.
*Grade 5: Music:* Songs used in the fields, during for example, cultivation, harvesting and threshing.
*Grade 6: Music:* Folklore songs on the region's natural vegetation (forest) and coffee plants.

### *Teacher training*

A draft document by MOE (1995) states that the curriculum of pre-service education for the last 20 years has been suffering from shortcomings, such as objectives and content that lacked coherence and co-ordination with the curriculum of schools, and equipping student-teachers with inadequate teaching skills, knowledge and attitudes. In order to resolve the problems encountered, and to facilitate the efficiency of teacher education and training, a new Education and Training Policy has come into effect. The policy stipulates that teacher education and training components will emphasise basic knowledge, a professional code of ethics, methodology and practical training. A strategy of the policy is that teacher training programmes and the curriculum will be made relevant to the new educational objectives, and be responsive to the different curricula of general education. In response to this strategy immediate action was needed in preparing a new curriculum for primary school teacher training following the new primary education strategy teacher training institutions (TTIs) will train teachers for the two cycles. Teachers of the basic primary cycle (1-4), and teachers of the general education (5-8) will undergo a 2 year initial training programme after completing grades 10 and 12 respectively. To recruit trainees that have completed grade 10 of the new curriculum will take a period of 6 years, since the new curriculum is introduced on a sequential basis through various stages of preparation, evaluation and trial programmes. As a compromise, a short term plan has been implemented to train teachers in one year. Trainees are selected depending on successful completion of grade 12, and their devotion, interest and commitment to the teaching profession. Most of the teachers interviewed for the study will have completed the previous course of training; a one year Teacher Training Institute (TTI) qualification that follows twelve years of schooling. This was a general training covering pedagogical skills as opposed to a specific subject area.

### *Donor funded projects*

Ethiopia is receiving a considerable amount of funding from multilateral, bilateral and NGO donor agencies and a fair proportion of this funding is to the education sector. In Oromia Region international donor funded projects include: assisting with in-service training; rehabilitating schools; building capacities amongst TTI teachers and educational officials; production of educational radio programmes in Afaan Oromo and natural science for grades 2&6; training female teachers as gender sensitive advisors in high schools; and, conducting training on literacy programmes and materials production. NGOs working in the region have projects in school construction, supply of equipment and materials, and the rehabilitation of pedagogical centres.

# 2 The Schools

## 2.1 Selecting the schools

Due to logistical problems, only one week of field work was accomplished in Ethiopia. This was not sufficient time to study two schools in detail. A full case study was carried out in the innovative school, and a day was spent in another school (school B). The collaborating partner for this study is from Oromia (Region 4) Education Bureau; which is the main reason for selecting schools in this region. The innovative school was selected following indicators in the research guidelines, it is also a pilot school for the new curriculum. School B is in the same region, approximately 40 km from School A, and according to officials from the district education office, is not known for any special or innovative practices.

**Table 1**: Summary of Schools A and B

| *Factor* | *School A* | *School B* |
|---|---|---|
| • grades | 1-8 | 1-8 |
| • shift system for classes | no | two shifts |
| • number of pupils m:f (total) | 701:350 (1051) | 698:463 (1161) |
| • main source family income | agriculture | agriculture |
| • attendance rate | 80-92% | 90% |
| • enrolment rate for area | 45% | n.a. |
| • drop-out | 4.2% | 10% |
| • repetition | 2.2% | n.a. |
| • average teacher:pupil ratio | 1:40 | 1:45 |
| • adult literacy rate (region) | 5-25% | n.a. |
| • number of teachers m:f | 20:6 | 19:7 |

## 2.2 An 'innovative' school - School A

### 2.2.1 The Community Environment

*The village4*

The village lies in a remote area approximately 17 kms along a dirt track from the main Addis Ababa-Debre Markos road (Photo 1). The majority of families are engaged in traditional, subsistence agricultural practices. The average farm size per family is around 1.5 hectares and approximately 40% of the farmers are landless. There are between 140-200 families in the village (although the population was estimated at around 3,361) and the average family size is seven persons. There is no electricity or sanitation in the village and four stand pipes provide poor quality water. Men are in charge of all agricultural activities and women have economic control of the household. Both men and women are involved in farming. Literacy rates are low and estimates were given of between 5% - 25% of the adult population over 25 years of age being literate. Major social problems identified in the village were, health problems (malaria, worms, TB and eye diseases); no health centre; no electricity; no higher education secondary school; no agricultural banking, credit or savings group; poor transport; and, no telephone or post office. Most of the community follow the Ethiopian Orthodox Church.

*Agriculture*

The main rainy season is from June to September, and harvest and land preparation will vary depending when the rains arrive. Generally, peak times in the year are April to August for sowing and weeding, and November to February when harvesting followed by land preparation takes place. Crops grown tend to be for subsistence and include tef[5], wheat and oats. Other income is from cattle and dairy products, honey production, vegetables and fruit. Farmers receive a limited amount of support

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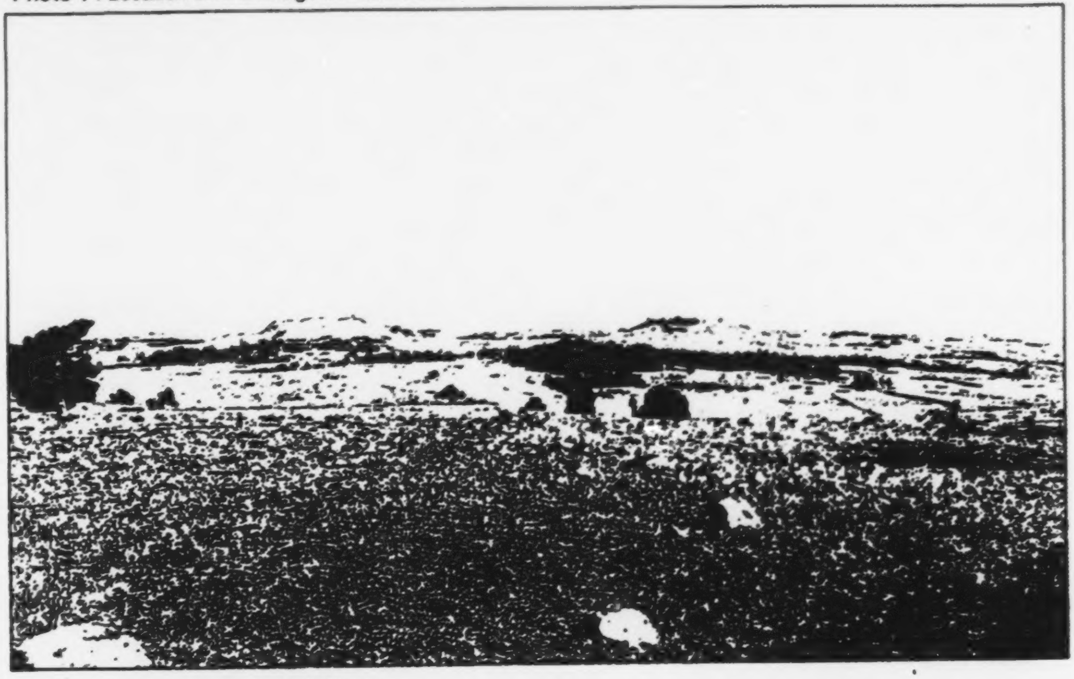
[4] information on the village and agriculture was obtained from the *Woreda* Agricultural Extension Office and the *Woreda* Administration Office

[5] cereal crop

through the agricultural extension service, which helps supply farmers with inputs. There is only one agricultural extension agent per 1800 farmers in the *woreda.*

**Photo 1** : Location on the village and School A



***School and community relations***

There is a school committee whose function is administrative and to provide a link between the school Director (who is the Committee Secretary), the school, and the community. It is an elected committee of 8 community members, 1 teacher and 1 pupil. The committee deals with all financial problems and the school budget, school buildings, school equipment and provision of seeds for use in the school agricultural plot. During a visit to the school by the researchers a committee member arrived unexpectedly to check the school accounts. Teachers say that relationships between the school and the community are good (12 teachers are past pupils of the school). Sometimes there are problems over the community's lack of awareness of the importance of education, especially where pupils drop-out and go back to work in the community. Teachers are then faced with parents asking *'what is the point of education if they don't get qualifications?'.*

Community members are interested in the agricultural activities and generally what is happening in the school. The school sells vegetables from its agriculture plot to community members. They help the school by donating vegetable seeds, cultivating the school land, loaning oxen for ploughing and providing free labour. During peak harvesting times the whole school may help the local community to gather the harvest. This year the *woreda* administration approached the school committee to request that teachers and pupils at the school helped to gather this year's harvest as there was a danger that heavy rains would cause major crop losses. The school was closed for a week and all pupils and teachers participated.

### *2.2.2 The School Environment*

The school is accessed from the main road leading to the village. The main gate is approximately 100 metres from the road. There is a football pitch in front of the school and a volleyball court inside the grounds. A natural watercourse has been diverted through the grounds which is used for irrigating the agriculture plot. The school compound is surrounded by a five strand barbed wire fence to keep livestock out and generally the grounds are tidy. There is some effort to make the grounds more aesthetically pleasing through giving each grade the task of looking after individual plant beds. There is a school agriculture plot, which is used for teaching and learning purposes (agriculture was a subject in the old curriculum, now it is part of science) and also for bringing an income into the school. Nine hectares of land is rented to local farmers, and last year ETB 5000 was earned from rent and growing one hectare of vegetables. This is a considerable sum as the average family income per year is estimated at ETB 1300.

**Photo 2:** The school buildings (School A)

The school was established in 1965. It is a government school with grades 1 to 8. Grades 1 and 3 each have 3 sections due to large pupil numbers, grades 2 and 7 have 2 sections each, and grades 4,5,6 and 8 all have 1 section. There is one classroom for each section. Grades are not divided according to ability and there is often a great variation in pupils' ages within a grade. Classrooms are constructed from wood, mud and straw (Photo 2) with few windows and little ventilation. There are not enough benches or desks for pupils, conditions are very cramped (Photo 3 & Photo 4) and overall the classroom size (10 x 6 $m^2$) is inadequate for the number of pupils. There is a library/staff room, directors office, pedagogical centre (Photo 5) and a small office for equipment. There are two toilet blocks and facilities for boiling water (to make tea). The school has a solar powered radio, given to the school through a donor agency 'Audio Distance Education' programme.

### *School system*

School terms are September to December and January to June with a two week break at the beginning of February. School hours are 8.30 - 12.30 and 13.55 - 15.15. Lessons are 45 minutes long; where the new curriculum is being implemented lessons are in 40 minute periods.

### *Enrolment, Pupil Numbers, Attendance, Drop-out and Repetition*

Table 2 illustrates the number of pupils in the school. Approximately 45% of pupils in the surrounding area are enrolled in the school. The remaining 55% are unlikely to attend any schools; the enrolment rate for Oromia Region is 29% (1996). The overall attendance rate is around 92% and is highest during October to March. Attendance is lowest during April to June, at around 80%, when more land cultivation is undertaken.

**Table 2:** Pupil Numbers by class (1996) - School A

| *Grade* | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
|---|---|---|---|---|---|---|---|---|
| boys | 182 | 153 | 91 | 39 | 39 | 50 | 68 | 79 |
| girls | 127 | 84 | 44 | 13 | 23 | 30 | 15 | 14 |

During 1995 there were 25 male and 19 female drop-outs. The drop-out rate is highest in grade 1 and this is usually due to poor health and family problems. In the higher grades drop-out is due to marriage and the need for children to help at home, either in agriculture or other tasks (mainly girls). Repetition mainly occurs in grades 1 and 2. In 1996 there were 11 repeaters in grade 1 and 12 repeaters in grade 2. This is usually due to pupils being below school age and classrooms being overcrowded. In grades 1 and 2 some children were as old as 15 years, in a class with 7 year olds (Photo 3). At registration for the new school year parents were arriving with under school aged children (grade 1 pupils should be 7 years old). This was noticed through use of the 'arm test[6]' but because there is no evidence (birth certificates) of age and because many pupils are malnourished, it is difficult to reject them on the grounds of this test. The school decided to set up a kindergarten, although there are no adequate facilities for this and little money to purchase resources. In the kindergarten, pupils aged 3 to 6 years, sit on stones in a dark, airless hut. There are no teaching-learning aids in the room and the walls are bare. The *woreda* education and administration offices were not able to help in the matter or provide a teacher, but the director released one teacher from his staff to work in the kindergarten.

**Photo 3: Inside the classroom of grade 3 (School A)**

**Photo 4:** A grade 5 maths lesson

### *Assessment and Examinations*

The director of the school is quite satisfied with the exam system, which consists of continuous assessment in grades 1-4; semester exams and monthly short tests in grades 5-8; and final national exams, prepared at regional level, in grade 8.

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[6] this test is implemented to estimate a child's age. The child is asked to stretch one arm over their head to touch the opposite shoulder. Age is estimated depending on the distance of reach.

### *School committee*

In all sections of all grades there is a parent committee. This comprises 4 parents, nominated by other parents, and a secretary. This committee deals with discipline and other general problems; for example, if a pupil is frequently absent the problem goes to the parents committee who then approach the pupil's parents.

### *2.2.3 The Teachers*

There are 26 teachers in the school, 6 female and 20 male. The average age of teachers is around 24 years. The Director has been at the school in this position for 3 years. He appears to be a highly motivated and enthusiastic individual and has a good working relationship with his teachers. Following his appointment to the school he believes that collaboration between teachers has improved and they are now more motivated and hard working. The majority of the teachers have been at the school for between 3 to 6 years and five teachers have more than seven years service each. All teachers have the basic TTI qualification and the agriculture teacher also has a diploma.

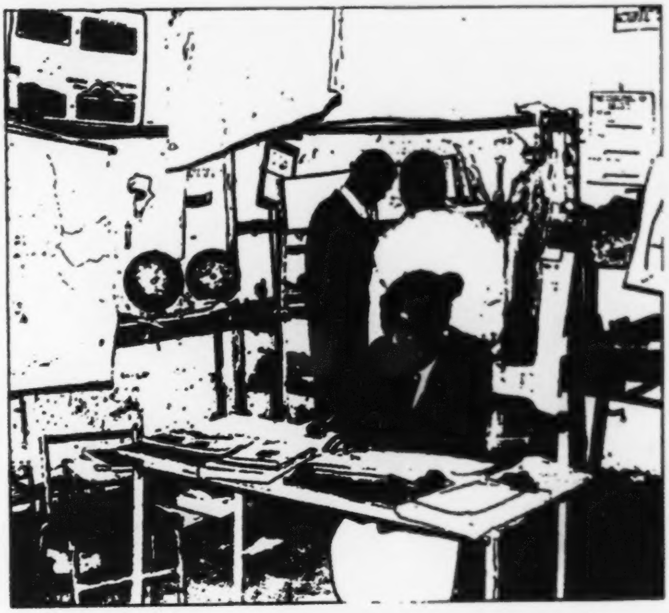
Altogether five male and three female teachers were interviewed in two groups. All except one of the teachers were under 24 years old, and all had the required basic TTI training. The first group of teachers were enthusiastic and responsive in the interviews. They enjoyed the matrix ranking activity and held active discussion over the exact meaning of the matrix headings and their responses to them. This group of teachers had participated in the pilot (new curriculum) programme workshops, and were more enlightened. The second group of teachers were initially passive and unresponsive. They did however, start to show interest in the matrix and had quite active discussions when ranking the methods of teaching.

One of the main problems at the school is the lack of finance. The government provides text books, occasionally chairs and tables, and they pay teachers' salaries but the school must raise funds for general school maintenance, tools for agriculture, materials to make teaching aids, blackboards, chalk and other materials. The school does not have sufficient income to equip the school to an adequate standard. There are not enough classrooms for the number of pupils. Although the school would like pupils to have uniforms, parents cannot afford to buy them. Some pupils do not even have exercise books and there is a general lack of textbooks. Other major problems identified by teachers include:

- textbooks do not arrive on time and there are not enough. This problem is overcome by writing on the blackboard and giving assignments, but teachers believe teaching would be more effective if all pupils had textbooks;
- classrooms are overcrowded (in grades 1 and 2 there are more than 90 pupils to one teacher) and there are not enough desks and benches. Classes are only held outside for practical work and when listening to the radio. The radio is used frequently in school teaching;
- there are no materials for teachers to produce their own teaching aids;
- some equipment suggested in textbooks (e.g. chemicals in science) are not available in the school;
- there is a large fluctuation in the attendance rates of some pupils;
- health problems which lead to long periods of absenteeism;
- motivating pupils is difficult; mainly in lower grades where overcrowding means a teacher cannot give attention to individual pupils;
- pupils travel long distances to get to school (up to 2 hours), many come without food, so pupils are constantly fainting;
- problem of girls being "hijacked" for marriage which is one of the reason for the low number of female pupils in higher grades. Previously, daughters in their teens were sold into marriage by their parents. If this happens to girls now, the school will intervene to try and stop the marriage taking place. In the last three years the school has made a concerted effort in this area to try to make parents aware of the importance of allowing their daughters to receive an education. Most of the time the school is successful in stopping the marriages, and this has formed closer bonds between the teachers and both male and female pupils.

New graduates with TTI qualifications felt that the level of training was not sufficient for teaching higher grades. The training covered pedagogical skills but little about subject content. The teacher's guide helps, but it is not adequate and it often refers to the pupil's text which does not arrive on time. As the school is a pilot for testing the new curriculum, teachers have been to workshops on implementing the new curriculum, but they feel this is not enough. The training at these workshops was shallow and did not go into the subject area. They would like more training to update their knowledge, so that they are able to follow the new curriculum. One teacher has a diploma in agriculture, but the other teachers feel they need more practical training in agriculture as they run an agricultural club as a core curricular activity.

**Photo 5:** The Pedagogical Centre (School A)



### *What is a good teacher?*

Many of the pupils responses to the question 'what are the characteristics of a good teacher?' relate to the teacher's skill and patience in ensuring pupils have understood a lesson (Table 3). Pupils also mentioned that a good teacher would *'use illustrations and examples so that lessons can be remembered'*. In response to the same question Grade 5 pupils complained that *'we do not understand Amharic when the women teachers take us'*. This is probably because pupils do not start learning Amharic until Grade 5 and the teacher only speaks Amharic, so is unable to explain in Oromo any misunderstandings the pupils may have.

**Table 3**: What are the characteristics of a good teacher? (School A)

| *Pupils' response* | *Teachers' response* |
|---|---|
| *A teacher should:*<br>· explain by giving illustrations and examples so that the lessons can be easily remembered<br>· be knowledgeable<br>· use different teaching methodologies<br>· not mind repeating something until pupils understand<br>· correct and advise pupils when they make mistakes<br>· use little corporal punishment<br>· *'explain well and revise the subject until we understand it'*<br>· *'gives us a chance and encourage us to ask questions'* | *A teacher should:*<br>· have an all round personality<br>· be involved in extra-curricular activities<br>· change with situations<br>· be knowledgeable about a subject<br>· plan lessons and prepare teaching aids<br>· follow up lessons<br>· monitor pupils<br>· be accepted into community (a teacher not accepted into the community will not be accepted by pupils)<br>· be resourceful , adaptable, committed<br>· treat all pupils equally<br>· be aware of differences in abilities between pupils<br>· know how to help weak pupils<br>· give good examples<br>· relate classroom teaching to the locality<br>· make their own effort to improve their level of knowledge for effective teaching and learning processes<br>· help in extra-curricular activities |

### *2.2.4 The Learners*

Pupils were interviewed from grades 5 and 6 as they follow the new curriculum. Grade 5 pupils have followed the new curriculum since the beginning of this school year (1996), and Grade 6 pupils have followed the new curriculum since they were in grade 5. All pupils interviewed come from agricultural backgrounds and out of 13 pupils, three girls and two boys walk up to two hours to come to the school. The subjects pupils (grade 6) like the most included science *'because it integrates many subjects'*, music, social science and maths *'because I am good at maths'* (girl). Social science, English, Oromo and maths were subjects liked by grade 5 boys because *'they are easily understood and will be useful to us in the future'*. The girls liked maths, language and social science. Grade 6 pupils said overall they like all subjects, there is nothing they dislike. Grade 5 pupils disliked English *'because it is difficult to understand'* and science *'because it is difficult - the textbook is difficult'*. Pupils say they would like to continue with their education and have professional careers such as a doctor, pilot or teacher, but this depends whether they pass their final exams. A number of pupils said they would like to become *'educated, better farmers'*; one pupil said *'I don't want to farm because the standard of living is low, but agricultural extension agents are important for the farming community'*. When asked why they do and don't go to school (Table 4), general expected answers such as, *'to improve our knowledge'* were given. One boy said *'so that we can teach others who are ignorant'*; his parents are illiterate, they attend literacy classes but he also helps them.

**Table 4**: Why do some children go to school and others don't?

(• indicates response from class 5;◊ indicates response from class 6)

| *Why do children go to school?* | *Why do some children not go to school?* |
|---|---|
| ◊ To build our literacy/knowledge and our country<br>◊ To learn and increase our knowledge<br>◊ To help ourselves and our parents<br>◊ To improve behaviour and attitude<br>◊ To learn to respect people and have good manners<br>◊ So that we can teach others who are ignorant<br>◊ To improve our standard of living and develop languages<br>◊ To learn all subject areas | ◊ because parents are ignorant<br>◊ Poverty/financial problems<br>◊ Too far to travel to school; they stay and work on the farm instead<br>◊ Social problems - badly behaved children don't go to school |
| • To get knowledge<br>• To get jobs to support family<br>• To learn about health<br>• To learn skills and handicrafts<br>• To learn languages | • Poverty<br>• Lack of parental support<br>• Lack of awareness of education by parents and pupils<br>• Have to work at home herding cattle/goats |

When pupils were asked what they like and dislike about school, one of the first responses about what they liked was *'the school environment'*. It appears to be very important that the surroundings are pleasing to the pupils. One pupil mentioned kidnapping of girls. This referred to a recent case where a girl pupil was kidnapped (for marriage) whilst the school was helping the community collect the harvest. She was later returned by police due to the school's intervention.

### *2.2.5 Pupils' activities at home and school*

Pupils say that there are many activities they learn at school which they use at home. An example was given from a science class about water filtration. The water in the village is of very poor quality, and at school pupils learnt about the health benefits of filtering and boiling water. They have taken this knowledge home and their parents now carry out this practice. At school pupils learnt how to prepare nursery beds for vegetables (e.g. carrots and onions), and they learnt about growing chilli and pepper; they now grow these crops at home. Pupils say they have taught community members about the importance of preventing disease transmission, washing clothes, and hygienic sanitation practices. They advise illiterate people in the community about their schooling and encourage them to go to school.

Pupils could identify some areas in which their home experiences had been brought into the classroom. For example, grade 5 pupils say that they measured land in a maths lesson, and they have used the sports field to measure straight lines and circles. One girl said *'what I learn theoretically at school I then apply on a field at home; it is accurate'*. In terms of bringing knowledge and experiences from home into school, one boy mentioned that he brought eucalyptus seeds from home to plant in the school. Another said that culture practised at home is brought to school (as folklore) so that it *'can be a lesson for others'*.

Pupils said that generally learning in school is not difficult because lessons follow on as they continue from grade to grade. They also said that practical lessons and observation makes learning easier: *'folk stories may teach us useful things and we learn these at home', 'it is easier to learn discipline at home', 'language and counting is easy to learn at home in a simple form. We then improve our knówledge at school'*. These were comments made by grade 6 pupils to the question, 'is it easier to learn things at home?'. Agricultural practices are learnt at home and it is easy to relate topics in subject areas which use agriculture as examples. Grade 5 pupils gave one example where they had learnt that it was bad to burn stubble and grass, as it was detrimental to the environment. Pupils say that teachers do ask about their experiences outside school, and again folklore was mentioned, *'folklore and stories from the local community may give lessons to others through these experiences'*. Another pupil said that teachers ask whether there are any plants or flowers that pupils have at home, that are not in the school. Grade 5 pupils say teachers ask them about certain practices at home, for example, whether they cover food to prevent flies landing on it; they then learnt why they should cover food.

Pupils mapping diagrams (an example is shown in Figure 1) showed that boys tend to be involved in agricultural activities more than girls, although harvesting, watering plants and herding livestock appears to be done by both boys and girls in grade 5. Generally girls appear to do all of the household tasks both at school and home.

**Table 5**: What children like and dislike about school (School A)

(• indicates response from class 5;◊ indicates response from class 6)

| *What do you like about school?* | *What do you dislike about school?* |
|---|---|
| ◊ Music (girl who likes singing)<br>◊ Companionship<br>◊ Learning<br>◊ The plants and vegetables in school grounds<br>◊ Good environment<br>◊ Teachers teach us well and pupils are willing to participate<br>◊ Learning practical skills which we can apply at home e.g. water filtration improves health | ◊ Grade 1 children make a mess of the compound<br>◊ Kidnapping of girls<br>◊ Not enough materials and facilities for practical activities<br>◊ Over crowded classrooms<br>◊ Shortage of reading materials<br>◊ Working outside if there is insufficient classrooms as this is damaging to the eyes |
| • Learning about cleaning and sanitation<br>• Like school environment<br>• 'Refreshing our minds'<br>• Helps us to get a good job<br>• Hope for future - To be a teacher or doctor | • Sometimes school asks us for money and we don't have it |

### *2.2.6 Teaching Learning Processes*

The Director is able to identify many strengths at his school. He says he has very capable teachers who are highly motivated and show a great interest in their work. Teachers learn from and help each other, with the experienced teachers helping the less experienced teachers. Despite many pupils having to travel long distances on foot to reach the school, they are hard working. Pupils have ability, enthusiasm and perseverance and all of these factors contribute to increased teacher motivation. There are very good relationships between teachers and pupils, and pupils show no fear in asking the teacher questions. There is a question and answer competition each week between classes in each grade. This aids pupils in learning and revision for exams, and there is an award at the end of the year for the pupil that wins the most question and answer sessions.

Pupils and teachers raise money for the school through agricultural and home economic activities. This gives them a feeling of ownership of the school and leads to more respect for the school grounds and equipment. The extra income means also that buildings are better maintained. The home economics club raised ETB 250 for the school by selling bread and tea. The agricultural club raised ETB 300 from selling produce.

**Table 6**: Activities at Home and School (School A)

(Summary of mapping diagrams by pupils from class 6, by frequency of occurrence of each activity in the mapping diagrams)

| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
|---|---|---|---|---|---|
| fetch water | 2 | 3 | watering plants | 1 | 1 |
| digging | 3 | | digging | 3 | 1 |
| fencing | 2 | | playing football | 2 | |
| collecting firewood/chopping | 2 | | learning | 4 | 2 |
| studying/homework | 3 | 1 | volleyball | 1 | |
| herding | 3 | | planting | 1 | |
| planting | 1 | | raising flag | 2 | |
| water plants/vegetables | 2 | 3 | plant trees | 1 | |
| harvesting | 1 | | clean classroom | | 3 |
| playing football | 2 | | playing ball | | 2 |
| clean house | | 1 | having books marked | | 1 |
| planting vegetables | | 1 | land cultivation | 1 | |
| make coffee | 1 | 1 | collecting and burning rubbish | 1 | |
| plant coffee | | 1 | planting coffee seedlings | 1 | |
| cooking | | 1 | planting sugar cane | 1 | |
| serving coffee | | 1 | writing | | 3 |
| clean house | | 2 | | | |

**Table 7**: Activities at Home and School (School A)

(Summary of mapping diagrams by pupils from class 5, by frequency of occurrence of each activity in the mapping diagrams)

| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
|---|---|---|---|---|---|
| collect firewood | | 1 | plant flowers | 2 | 1 |
| collect tef | | 1 | plant vegetables | 1 | 3 |
| cook | | 1 | plant enset[7] | 1 | 2 |
| make tea | | 1 | clean classroom | 1 | 3 |
| fetch water | 2 | 3 | weed | | 2 |
| harvest | 3 | 3 | learn in classroom | 2 | 2 |
| plant enset | 1 | 1 | make tea | | 1 |
| make dung fuel | | 1 | fencing | | 1 |
| clean house | | 2 | fetch water | | 1 |
| bake injera | | 1 | water vegetables/flowers/tree | 1 | 4 |
| collect dung | | 1 | play sport | 2 | 1 |
| make coffee | | 3 | read in library | | 1 |
| herd/take cattle/goats to water | 3 | 2 | make straw stack | 1 | |
| homework | 2 | 2 | plant eucalyptus | 1 | |
| waters flowers/plants | 1 | 1 | harvest tef | 1 | |
| clean out cattle shed daily | | 1 | look after seedlings | 1 | |
| make alcohol | | 1 | look after school ground | 1 | |
| take care of siblings | | 1 | clean latrine | 1 | |
| make straw stack | 1 | | drink tea | 1 | |
| plant eucalyptus | 1 | | read | 1 | |
| plant seedlings | 1 | | water coffee seedlings | 1 | |
| weeding | 1 | | ring bell at end of lesson | 1 | |
| read books | 1 | | | | |
| play | 1 | | | | |
| plant vegetables | 1 | | | | |
| harvest enset | 1 | | | | |
| look after tree nursery | 1 | | | | |
| play football | 1 | | | | |

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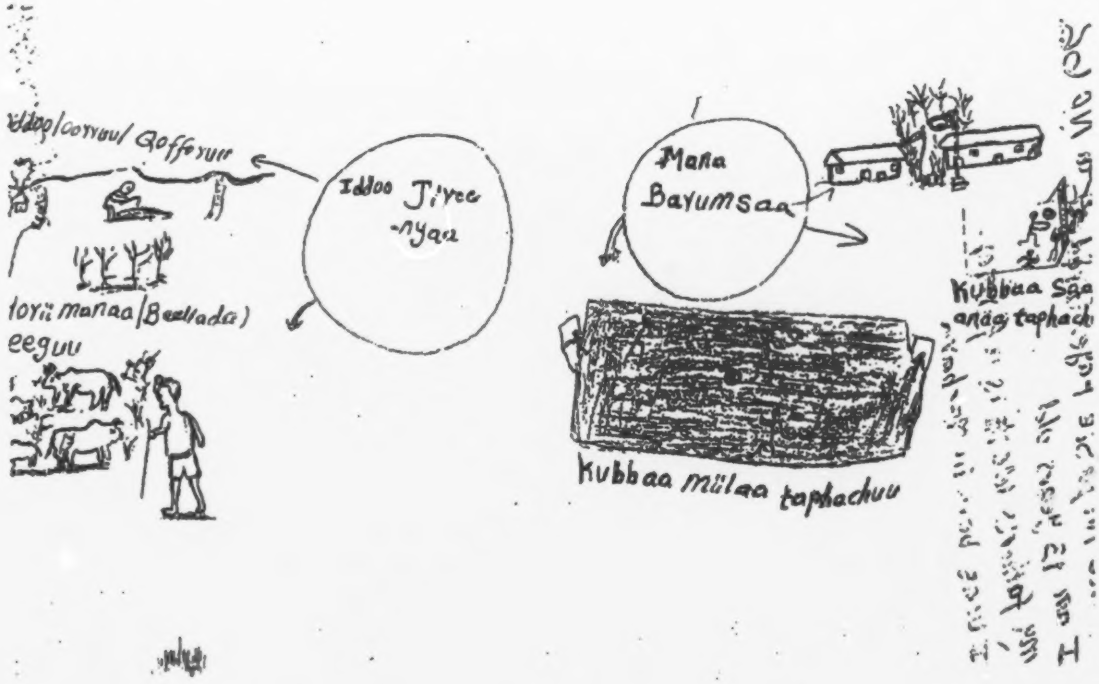
[7] enset is a staple food crop

Figure 1: A pupil's mapping diagram



### The curriculum and content of learning

Teachers say that the old curriculum was not related to lives of pupils and at that time the school had no input into curriculum development. Now the school is one of 110 pilot schools involved in implementing the new curriculum. Due to it's involvement, it is in a position to make comments and recommendations on the new curriculum. Teachers believe that the new curriculum is relevant to the lives of the pupils, but it depends on the teachers' ability to implement it. They feel that the content is adequate but the implementation is difficult. Some teachers have undergone a short orientation course on the new curriculum, but others have had no training. Teachers do not know how to manage large classes and still follow the curriculum. The teacher's guide and the syllabus allows teachers to bring in relevant examples, as and how they feel necessary. If teachers are not capable of doing this, there are other teachers in the school who are able to help, advise and guide them; teachers share experience in assisting each other.

### Teaching learning practices in the school

The matrix ranking activity (table 8) was carried out with two groups of teachers and two groups of pupils. Pupils were very quick to grasp the matrix ranking activity. There were active discussions between all the pupils, such as *'how can we "ask questions and give examples" unless the teacher elaborates and "explains, asks us questions and gives examples" ?'*. Results were very interesting as both groups of teachers and pupils gave similar rankings. 'Pupils learn by doing' and 'teacher demonstrates' were in the top three rankings by both groups of teachers and pupils. Observations and interviews in the school indicated that these methods of teaching are frequently employed. There appears to be a fair amount of project work carried out in the school, which is usually done outside classroom hours, e.g. making a model to illustrate the use of solar energy, and making a model of a microscope. During the long vacation, pupils (grade 6) are set an assignment by teachers. For example, one was set on the use of fertilisers. Pupils were to inform local people what they had learnt in the classroom, and they then reported back on the outcome of their advice to local farmers. There

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are also a number of co-curricular activities, such as the agriculture club and home economics club, which pupils seem to enjoy. 'Pupils read from textbooks' is ranked below 'pupils write' and 'pupils repeat and recite' possibly because of the shortage of reading and writing materials. When a teacher is absent, pupils will teach each other. An English lesson was observed in which a male pupil was taking the lesson by following the pupils' text book. The pupil had written the lesson on the blackboard and was asking the class to answer the questions. Pupils were keen to answer and they questioned the pupil in charge if he made a mistake. Better pupils are put with poorer pupils so they help each other. In another class, a group of pupils was selected to set general knowledge questions which were then presented to the rest of the class for discussion. Despite the use of these methods of teaching and learning, where it appears that pupils spend a lot of time teaching each other, they do not give a high rank to 'pupils teach each other'; teachers rank this method highly. Teachers say that pupils are encouraged to ask questions in class, although both teachers and pupils do not rank this highly as a method of learning. Pupils say that they only ask questions to teachers about work they don't understand, but in their listing of the qualities of a good teacher (Table 3) they mention a good teacher should *'encourage them to ask questions'*. In science they may ask how the results were obtained. Sometimes they will ask teachers about things they have seen outside school, e.g. different land practices. Teachers ask questions to pupils to ensure they have understood a lesson.

**Table 8**: Methods of Learning (School A)

| Rank | Teachers' response (group 1) |
|---|---|
| 1 | • pupils 'learn by doing' |
| 2 | • teacher demonstrates |
| 3 | • pupils teach each other |
| 4 | • teacher explains, asks questions and gives examples |
| 5 | • pupils ask questions and give examples |
| 5 | • teacher reads from text books |
| 5 | • pupils repeat or recite |
| 6 | • pupils read from text books |
| 7 | • pupils write |
| * | • teacher punishes pupils |

| Rank | Teachers' response (Group 2) |
|---|---|
| 1 | • pupils 'learn by doing' |
| 2 | • pupils teach each other |
| 3 | • teacher demonstrates |
| 4 | • pupils repeat or recite |
| 5 | • pupils ask questions and give examples |
| 6 | • teacher explains, asks questions and gives examples |
| 7 | • pupils read from text books |
| 8 | • pupils write |
| 9 | • teacher reads from text books |
| * | • teacher punishes pupils |

| Rank | Pupils' response (grade 5) |
|---|---|
| 1 | • pupils learn by doing |
| 1 | • teacher demonstrates |
| 2 | • pupils repeat or recite |
| 2 | • teacher explains, ask questions and gives examples |
| 3 | • pupils teach each other |
| 4 | • pupils ask questions and give examples |
| 5 | • pupils write |
| 6 | • teacher reads from text books |
| 7 | • pupils read from text books |
| * | • teacher punishes pupils |

| Rank | Pupils' response (Grade 6) |
|---|---|
| 1 | • teacher explains, asks questions, gives examples |
| 2 | • pupils learn by doing |
| 3 | • teacher demonstrates |
| 4 | • pupils ask questions and give examples |
| 5 | • teacher reads from text books |
| 6 | • pupils read from text books |
| 7 | • pupils write |
| 8 | • pupils teach each other |
| 9 | • pupils repeat or recited |
| * | • teacher punishes pupils |

**rank score = 0*

### *2.2.7 The Home Environment*

Parents did not appear very enthusiastic about being interviewed. Five parents (two female and three male) turned up at the school; they all live in the village and all of them are farmers. Four have been to literacy training but literacy levels are very low. Parents feel there are good relationships between the school and community and problems are dealt with through the parents committee or the school committee. Parents say teachers give support and advice to their children, one parent said *'we see teachers as our own children, because of their concern and commitment to the school'*. Parents have little involvement in school activities apart from providing the school with seeds and providing oxen and implements for cultivating the school land. Parents feel it is important that their children get a good education, as one parent quoted, *'I started school at the same time as my friend, but I dropped out after grade 3, he continued to grade 12 and is now a very successful, well off farmer - education is important.'*

Parents say they are satisfied with their children's schooling and that they should learn *'all subjects'* in school. Parents said their children learn language better *'because they are learning in their own language'*; they teach them about cleanliness; they advise them to wash their clothing; and, they bring home handicrafts they make in school. When asked whether their children talk about what they learn in school, the following responses were given: a mother (illiterate) said, *'no, we are farmers and have no time to listen. I tell them to go somewhere and study and not to disturb me'*; a father quoted, *'yes, about our backward culture, e.g. underage marriage, use of fertilisers and land cultivation techniques'*. Most parents did appear to know about their children's schooling, and said that children talk about what they learn in school, such as language, mathematics, environment and agriculture.

#### Parents' role in schooling

Pupils (grade 6) say that they talk to their parents about school work, areas mentioned included reproduction, AIDS transmission, and the effects on the environment through deforestation and soil erosion. Grade 5 pupils mentioned sanitation and cleanliness. Pupils say their parents are interested in their school work, they ask about *'planting seedlings in the school'* and *'about our learning'*. Many parents are unable to help pupils with their work, one girl said *'no one helps, the only time I get to do my homework is in the evening when everyone is asleep'* (she also walks two hours each way to get to school). Some pupils say their parents are interested in their schooling because they pay for books and other materials. One girl said her mother regrets not going to school, so she encourages her to get a good education. A boy said his parents told him *'learning is useless, you must stay at home and help us on the farm'*; he missed school for one year. His parents still didn't want him to go to school, but members of the community spoke to his parents to ask them to allow him to continue his education.

Parents say that they do learn things from their children. Examples given were planting seeds, language, use of fertilisers, yields per hectare and different techniques for sowing crops. Parents say they learn some of these methods from agricultural extension agents, but that what they learn from their children is also important. Their children do ask questions and they feel happy about this because *'we feel our children are getting a better education'*. They would like their children to get good jobs such as a doctor or a high court judge. One parent said he would like to see his child become an agricultural extension advisor and *'to be a better farmer'*.

### 2.2.8 Contextualising teaching and learning

Teachers say that it is important to relate to pupils' experiences in teaching and learning. When explaining difficult concepts, examples should start with home life and then move gradually to village, community, regional and national level. In science subjects, teachers and pupils will go outside and use the land, for example, to make measurements when learning mathematical concepts. Teachers believe such a process is good as they see that pupils appear to understand and grasp concepts more easily.

In the new curriculum there is flexibility that allows teachers to bring in examples and make subjects relevant to their particular environment. For example in science, to measure the volume of an item they used a pumpkin. In the text book, land area is referred to in terms of hectares; instead teachers use the local measure for area. When relating the content of a lesson to the environment, either home or school, if resources are needed and they are not available in the school, the teacher will go outside the school to find the necessary materials. Practical activities tend to take place in co-curricular activities such as the agriculture club and the home economics club; co-curricular activities increase pupils motivation.

### 2.2.9 Agriculture in contextualising teaching and learning

Teachers do use agriculture as a means of contextualising their teaching and learning practices in the school, although they do not appear to recognise this as an innovative teaching method. In science lessons a number of projects have taken place in which agriculture has been used to contextualise the subject. To illustrate plant growth rates with and without fertiliser, pupils brought manure from home, spread it on one plot and examined the change in yield and growth compared to a plot that was untreated. An experiment was undertaken to demonstrate the yield difference between maize that had been broadcast compared to that sown in rows. In certain cases the methods have been transferred to the community. Drama is used in teaching practices, for example in discussing responsibilities in the household they will enact what each member of the household does such as the youngest member herding cattle and the next youngest ploughing. Co-curricular activities are carried out with grades 1 to 8 and these often centre around learning through practical activities. For example, a group of pupils were given a plot of land and asked to solve questions such as '*how many radishes can you plant in this plot?*', '*how much money would you expect from your plot?*'. Teachers say that implementation of ideas and concepts, when involving agriculture, are taken up with more interest by pupils. When classroom learning is related to what happens in children's homes, motivation and attention is increased. Pupils' interest in agriculture is illustrated through the level of uptake by farmers in the community who have learnt through the pupils. Some pupils grow their own produce at home using knowledge they have gained in the school. They then sell their produce in the local market and use the money to buy textbooks, exercise books, pens, pencils and even clothes.

### *2.2.10 Issues arising from School A*

Teachers are unaware of some problems they may have such as special needs of pupils, making use of the resources around them and using multigrade teaching methods. There are very good relationships between teachers and pupils illustrated by the teachers' comments that pupils show no fear in asking questions. There is good student teacher interaction in the classroom; active participation in co-curricular activities; co-operation and collaboration between the school and the community (e.g. harvesting) and such events as regular question and answer sessions between groups of pupils. Relationships between teachers and pupils have been strengthened since the school started to intervene in cases where girls were sold into marriage, and there was no mention of this intervention causing conflict between the school and the community. There appear to be good supportive community relationships, possibly helped by the fact that many of the teachers are past pupils of the school and they live in the village. Teachers appear to be happy and highly motivated, but some say they would re-train for another profession if they had the opportunity, because the teaching profession is looked down upon. Teachers face many problems, primarily a lack of facilities and resources, textbooks that arrive late, little or no training to implement the new curriculum, fluctuation in the attendance rates of pupils, and overcrowded classrooms.

Teachers appear to be very active in making the best use of the resources around them to use in their teaching and learning processes. Teachers do not contextualise their teaching methods knowingly but there were a number of examples quoted by teachers that involved some element of bringing pupils' experiences into their teaching practices. In the new curriculum there is flexibility that allows teachers to bring in examples to make subjects areas relevant to their particular teaching environment. Teachers showed great interest in the research and were keen to know more about the process of contextualisation. During the end of the case study work in the school, a geography lesson was observed in the agriculture plot. Pupils were making a map of the village, which was then going to be planted with flowers to differentiate areas.

## *2.3 An 'average' school - School B*

### *2.3.1 The School Environment*

The school was established in 1976 and recently moved (1994) to a new site. The school appears well kept from the outside and buildings were similar to school A (Photo 6). There appears to be a very good school pedagogical centre (SPC) at the school which is in frequent use, a number of teachers were observed using aids available in the centre, such as diagrams and maps (see photo 3 in methodology).

#### *School system*

The school works in two shifts, 8.00 to 12.15 and 12.30 to 16.45. If there are two or more pupils from the same family the school tries to ensure that they come to different shifts. This means that parents will always have a child at home to help with farmwork or household tasks and so attendance may be higher.

### *Enrolment, Pupil Numbers, Attendance, Drop-out and Repetition*

There are 1161 pupils at the school, 698 boys and 463 girls (Table 9) . Last year there were only 809 pupils. As the school works a shift system, there are a number of sections to each grade. On average there are more than 50 pupils to one teacher. The overall attendance rate is about 90% and the drop-out rate is estimated at 10%. More than 90% of the pupils come from farming backgrounds.

**Table 9**: Pupil Numbers by class, 1996 (School B)

| *Grade* | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
|---|---|---|---|---|---|---|---|---|
| boys | 182 | 153 | 91 | 39 | 39 | 50 | 68 | 79 |
| girls | 127 | 84 | 44 | 13 | 23 | 30 | 15 | 14 |

### *2.3.2 The Teachers*

There are 19 male and 7 female teachers at the school, including the director. The director has recently been promoted to this position after serving 5 years as a teacher in the school. The average age of teachers is 27 years and the average length of service in this school is 10 years. All of the teachers have TTI qualifications and 4 teachers have Diplomas. Teachers interviewed (2 female and 3 male) were all between 25 - 34 years of age and they all have TTI training; one teacher also holds a diploma. All of these teachers have only 1-2 years service in this school although the majority have between 6-10 years teaching experience. In this school teachers have considerable more teaching experience than those in School A. Recent TTI graduates are usually assigned to remote rural schools, and those with more years' of service move to more accessible schools (such as School B). This is the main reason for the difference in years of service, and age of teachers, between the two schools.

Teachers face many physical problems in the school such as:

- shortage of text books and teaching materials;
- overcrowded classrooms;
- poor maintenance of equipment and a general lack of desks and chairs;
- no reference materials;
- not enough textbooks;
- the textbook, syllabus and teacher's guide all arrive at different times;
- lack of equipment suggested in the teacher's guide to demonstrate lessons practically.

**Photo 6**: School B

Recently a resource person was appointed for the SPC. He has made his own screen printer to produce, amongst other things, printed lesson planning sheets for teachers. As the school is on a main road it generally receives books and materials earlier than more remote rural schools. Overall there is a lack of funding to the school to enable it to buy materials and facilities, especially items needed to develop the SPC.

The school now implements the new curriculum in grades 1, 2, 5 and 6. Teachers feel that they have not had sufficient training to enable them to implement the new curriculum. They feel unable to cope with the content and there is too much demand in the new curriculum in terms of materials; there is no science laboratory at the school. One teacher recently attended a workshop at zone level for implementing the new educational policy. The same teacher was then expected to help train other teachers at *woreda* level. Some teachers walked 3-4 hours to reach the school in which the training was taking place, consequently they missed much of the course. The training was poorly organised and was not sufficient in terms of its objectives. There is no monitoring on the effect of these workshops. Overall, teachers feel in need of more training in all areas. One particular example was given in the use of science kits. At present the resources person is sent for training in the use of the kits, but the teachers who are the ones who will actually be using the kits receive no training.

Teachers appeared reluctant to say much about their teaching and learning practices in the school, especially the female teachers who said very little. Unfortunately the time spent in this school was very short which made it difficult to establish a rapport with teachers, and consequently the information they provided could not be clarified. The teachers all say they would like to stay as teachers, but to *'be a better teacher'*, *'improve knowledge'* and to *'improve teaching qualifications'*. In order to do this they would like to see improvements in teachers' lives and their status. If this were to improve it would have an effect on the community as they would value the teachers as being important members of society and consequently they would value their children's education.

Pupils responses to the question, 'what is a good teacher?' were similar to those at school A. Pupils mention the importance of the teacher being able to explain lessons well so that pupils could understand difficult concepts more easily. A good teacher, according to pupils, should also revise the subject and lesson until it is understood and *'explain and elaborate when we ask questions'*.

### *2.3.3 The Learners*

Activities were carried out with one group of grade 5 pupils. Pupils were very shy in this school and initially there were no volunteers for the interviews; they were suspicious about the interviews and time was needed to explain why they were needed. They freely responded once the activities began. When pupils were asked whether there was anything they learnt in school that they now use at home, one boy said that he learnt about raising chickens in a school lesson (not practical work) and now he keeps chickens at home. At school they learnt to plant eucalyptus; they already do this at home but the method is different. At school they trim the roots before planting seedlings as the tree grows better. Pupils have taken this knowledge home and say their parents now practice this method when planting eucalyptus. From interviews it appears that many pupils do not attend school because of commitments at home. This was also mentioned as a response when pupils were asked 'why do some children not go to school?' (Table 10). Reasons for attending school are similar to school A, to become knowledgeable and get a good job. Pupils like the subjects that they understand well and get good marks in, such as maths, Oromo language and social studies. One girl likes science and another enjoys social science *'because it is interesting'*. English and science were mentioned as the least liked subjects *'because they are difficult'*. Pupils did not really know what they wanted to do after primary school. The general consensus was to continue with their education if they get good grades. The likes and dislikes at school mainly concern resources, such as a lack of materials.

**Table 10:** Why do some children go to school, and others don't? (School B)

| *Why do children go to school?* | *Why do some children not go to school?* |
|---|---|
| • to learn<br>• to become knowledgeable<br>• to learn language and science<br>• to get good results and then a job<br>• to be a good teacher<br>• to become literate | • they have to work at home on the farm<br>• they have no money |

**Table 11:** What children like and dislike about school (School B)

| *What do you like about school?* | *What do you dislike about school?* |
|---|---|
| • lessons are interesting<br>• the school environment<br>• playing ball | • dusty classroom<br>• seats are broken<br>• small blackboard<br>• not enough textbooks (1 book per 5 pupils) |

### *Pupils activities at home and school*

More than 90% of pupils in the school come from farming families. Pupils' activities at home show that girls do most of the housework (fetch water, make coffee), as well as some of the agricultural activities. There appears to be little division between girls and boys in the type of agricultural tasks they do, except ploughing which tends to be a boys job. Nearly all of the pupils said that they do their homework at school because they do not have time to do it at home. When they get home from school they must help their parents with farm work. Some of the pupils walk for up to 1½ hours each way to reach school. Activities at school, such as watering plants and making tea, are carried out in clubs, the agriculture club and the home economics club respectively. The poor state of equipment (desks and chairs) is illustrated in photo 7 and also by one boy's answer to 'activities I do at school': *'I must check my seat before I sit on it because many of the benches are broken.'*

**Table 12**: Activities at Home and School (School B)

(Summary of mapping diagrams by pupils from class 5, by frequency of occurrence of each activity in the mapping diagrams)

| *Activities I do at home* | *boy* | *girl* | *Activities I do at school* | *boy* | *girl* |
|---|---|---|---|---|---|
| harvest barley | 2 | | fetch water from the river for cleaning classroom floor | 2 | 1 |
| plough | 3 | | attend class | 3 | 1 |
| thresh corn | 2 | 2 | homework | 3 | 1 |
| cut grass | 1 | | study | 1 | 2 |
| weeding | 2 | 2 | play | 1 | |
| herding cattle/goats/sheep | 1 | 1 | *'check that my seat is not broken before I sit on it'* | 1 | |
| cut grass for fodder | 1 | | water plants (in agriculture club) | 1 | |
| make coffee | | 3 | answer questions | 1 | |
| collect threshed grain from the field | | 1 | make tea | | 2 |
| roast cereals (for food) | | 1 | read textbook | | 2 |
| fetch water | | 3 | write | | 1 |
| cook *injera*[8] | | 1 | pay attention in class | | 1 |
| clean cowshed (daily) | | 1 | | | |
| wash clothes | | 1 | | | |

### *2.3.4 Teaching- Learning Processes*

As the director has only recently been appointed he was unable to give clear information about processes in the school, although previously he was a teacher at the school. The director believes this school is better than others in the area because there is high attendance rate. The SPC is good and there are experienced long serving teachers at the school. According to teachers pupils do very little project work in the school and few lessons are ever held outside the classroom, although 'pupils learn by doing' was ranked highly as a method of learning by both teachers and pupils. This could be because school clubs, such as home economics and agriculture, appear to be important activities in the school. Teachers do not allow pupils to work in groups because they say classes are too large (60-90 pupils), therefore teachers tend to use rote learning methods, such as 'pupils repeating and reciting'. Radio programmes appear to be used frequently in teaching.

Pupils said during group interviews, that they discuss between themselves when they don't understand something in class but they give 'pupils teach each other' a zero rank. When asked whether they ever ask questions to the teacher in class one pupil said *'yes, if something is not clear. The teacher encourages us to ask questions about the subject area, and they ask us whether we have understood.'* In the rankings however, pupils gave 'pupils ask questions' a low rank. 'Pupils read from textbooks' probably receives a low rank because it is a method not used often as there is a shortage of textbooks.

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[8] *injera* is a staple food in Ethiopia

Photo 7: a classroom

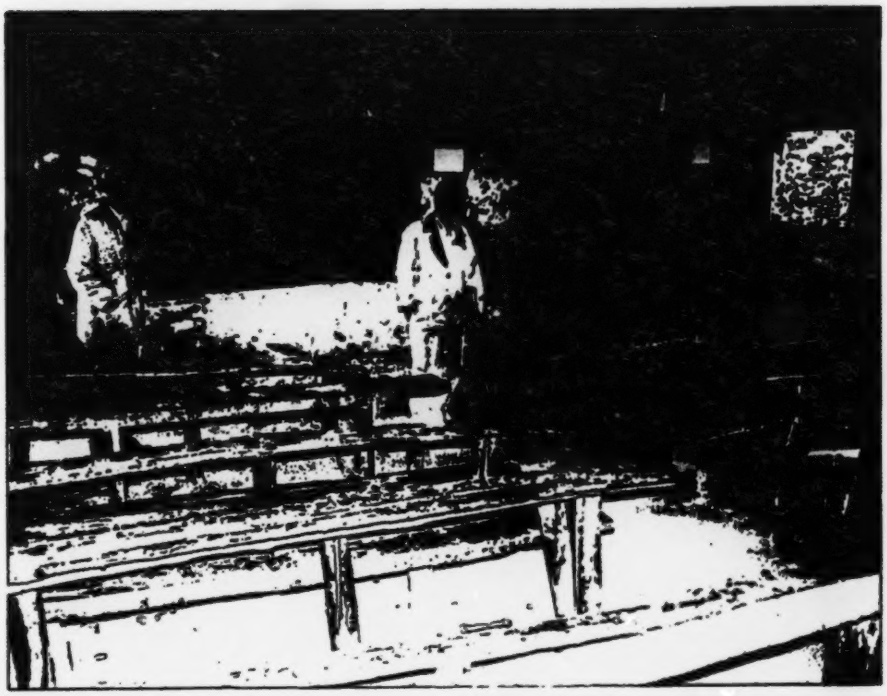


Table 13: Methods of Learning (School B)

| Rank | Teachers' response (group 1) |
|---|---|
| 1 | • teacher demonstrates |
| 2 | • pupils 'learn by doing' |
| 2 | • pupils repeat or recite |
| 2 | • teacher explains, asks questions and gives examples |
| 3 | • pupils ask questions and give examples |
| 4 | • teacher reads from text books |
| 4 | • pupils write |
| 4 | • pupils teach each other |
| 5 | • pupils read from text books |
| * | • teacher punishes pupils |

| Rank | Pupils' response (grade 5) |
|---|---|
| 1 | • teacher demonstrates |
| 1 | • pupils 'learn by doing' |
| 2 | • pupils repeat or recite |
| 3 | • pupils write |
| 4 | • teacher explains, asks questions and gives examples |
| 4 | • teacher reads from text books |
| 4 | • pupils read from text books |
| 5 | • pupils ask questions and give examples |
| 5 | • teacher punishes pupils |
| * | • pupils teach each other |

* rank score = 0

### *2.3.5 The Home and Community Environment*

Pupils come from very poor backgrounds where the majority of parents are illiterate. They say their parents are interested in their school work because they buy them pens and pencils and because they tell them to study well. Teachers say there is a general lack of parental awareness about the education of their children as parents rarely come to the school when they are asked. On parents' day less than 5% of parents came to the school. Pupils say they only talk about school work at home with *'someone who knows about learning'*. In the majority of households this is unlikely to be the parents. Sisters and brothers were the people mentioned as being able to help with school work.

#### *School and community relations*

Relations between the school and community are said to be satisfactory but teachers have little direct involvement with the community. Although the school was supposed to be a literacy centre, the programme has not started yet. There is little initiative from the community, according to the teachers' interview. Teachers say there is a lack of commitment and awareness by the school education committee which at present is not functioning well. Teachers have tried to resolve the matter with no success and they will need the help of higher officials in order to get co-operation from the school committee. There have been problems with vandalism at the school.

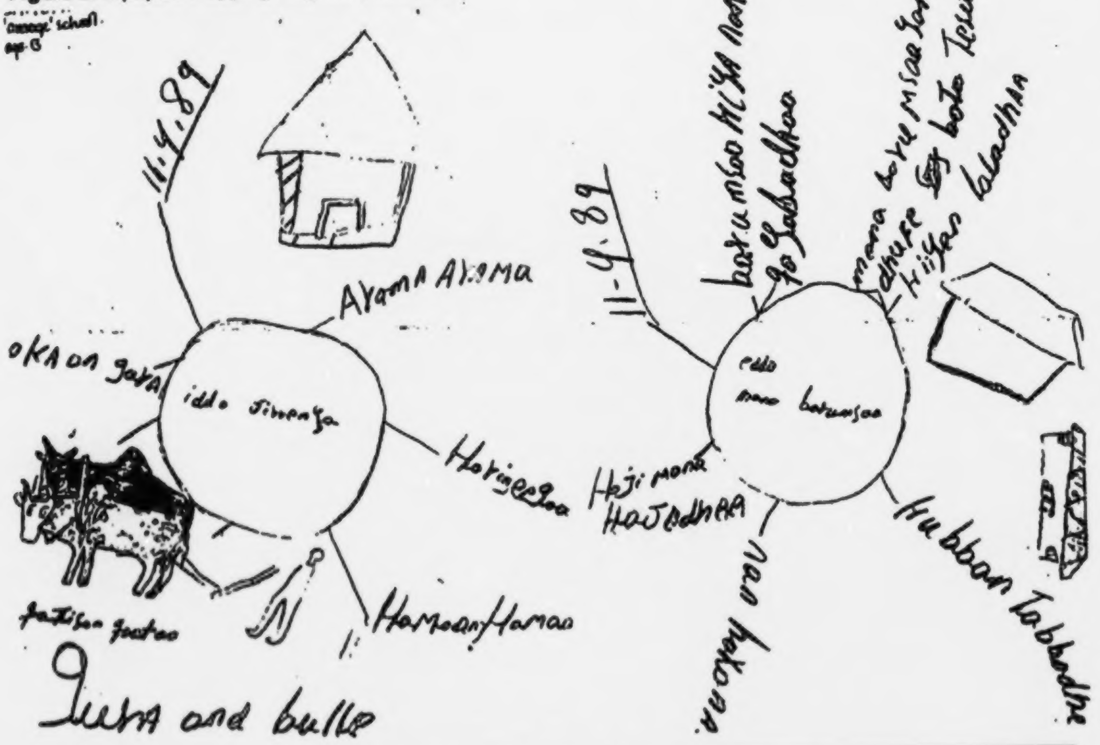
### 2.3.6 *Contextualising teaching and learning*

The new educational policy follows a pupil-centred approach to learning and indirectly makes reference to the process of contextualisation. Teachers agree that the idea is good but one which they have never seen in practice. Not enough time was spent in the school to reveal whether a contextualising approach was being used by any of the teachers. Pupils' interviews revealed that teachers sometimes asked them about home experiences during lessons. During a lesson on animal production, the teacher had asked them about their animals at home; one boy said *'I know how animals are raised at home, and this helps me to learn this subject in class'.* Teachers do draw upon agricultural experiences in lessons. Examples given were raising livestock and planting trees and seedlings.

### 2.3.7 *Issues arising from School B*

The director of the school does not appear to be fully aware of what happens on a day to day basis in the school. Relations between the school and community appear to be very poor, revealed by the fact that only 5% of parents turned up for a parent's day. Teachers in the school are experienced and well qualified, but they showed little enthusiasm to initiate their own innovative teaching methods. The curriculum requires that teaching and learning should be made relevant to the local situation. There is some evidence that teachers do this but generally there is no contextualised approach to teaching and learning in this school. The school has a very good pedagogical centre and recently a resource person has been appointed to run it. As in School A, this school lacks facilities and resources required for teachers to, they believe, carry out their job more effectively. Not enough time was spent in this school to produce a detailed case study but the information that was collected does indicate that poor community relations with the school affects teachers' motivation levels and consequently pupils' motivation. A contextualised approach that would involve community members may be a means of improving the situation.

**Figure 2:** A pupil's mapping diagram (School B)



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Ethiopia has over the past few decades seen many changes to its education system due to economic and political change. A document by the Transitional Government of Ethiopia (1994) states that there has been a gradual decline in the quality of education which has been pronounced in the past two decades. Factors such as scarcity of instructional materials, overcrowding, inadequate school buildings and a decline in the quality of teacher training have contributed to the problem. Moreover, the curriculum lacked relevance with no clearly defined objectives. Instruction concentrated more on theoretical knowledge with little connection to daily life. The approach lacked problem solving skills with a high tendency towards rote learning. Participation rates at all levels were very low with disproportionately low female representation, and the few schools available were mainly located in urban areas. The government (1994) states that almost all of the junior and secondary schools, with a total enrolment of 12% of the eligible age group, are located in the medium and large towns. Nearly 60% of rural communities have no schools. The poor access to primary schooling for children in rural areas was revealed during the fieldwork, when a fair proportion of children said that they had walked long distances, taking up to two hours, to attend school. (Poverty is another main reason for not attending school as children are needed to work at home where food production is likely to be a higher priority than education. During the fieldwork it was clear that many children, both boys and girls, are involved in agricultural activities daily. Pupils mentioned that homework had to be done at school because they had too much work to do at home.) Overall enrolment rates are low; UNICEF (1995) estimate the primary school enrolment ratio (gross) at 25% over 1986-92.

Ethiopia's Education Sector Strategy (1994) states that *'the main objective of any educational system is to cultivate the individual's capacity for problem solving and adaptability to the environment by developing the necessary knowledge, ability, skill and attitude', 'in this respect the existing educational curriculum of Ethiopia had not been properly developed to meet the societal and pedagogical demands', 'the curriculum is irrelevant and with no clearly defined objectives, the teaching concentrates more on theoretical knowledge with little connection to day to day life. The approach is not problem solution and students mainly rote learn'*. The strategy for education frequently refers to the use of the pupil's experiences in teaching and learning, the need for more innovative teaching methods and the need for more relevance in the curriculum such that, *'the content of the curriculum will be revised to be relevant to the needs of the community', 'the science teaching will emphasise application and will be properly linked with day to day activities of the student', 'the teaching/learning process shall emphasise problem solving by making the curriculum more relevant and by adopting appropriate teaching methods'*.

There was little evidence to suggest that teachers knowingly contextualise their teaching and learning practices in the schools visited. Reasons included, a general lack of resources, time constraints, overcrowded classrooms and poor teacher training that does not prepare teachers for using innovative teaching methods, or for making use of local resources in their teaching practices. A new curriculum has been developed for use in primary level teacher training, and this follows the objectives of the new educational policy. Trained teachers, however, have only received minimal training in using the new curriculum and most teachers interviewed were disappointed with the level of training they had received in order to implement the new curriculum. During fieldwork, discussions with teachers revealed a keen interest to know more about the idea of contextualising teaching and learning. As a process it was not one they were familiar with, but they felt it would be quite easy for them to practice because of pupils' daily contact with agriculture. A major objective of the previous curriculum was 'education for production'; so agriculture was taught as a separate subject and all schools had agriculture plots and agricultural teachers. The new curriculum for basic education focuses on a general curriculum where agriculture is incorporated into subject areas such as science.

In the 'innovative' school teachers were trying hard to make learning relevant to pupils. During interviews with pupils they were able to easily identify areas where agriculture had been brought into subject areas. The most frequent example given was measuring land area in a maths lesson. Teachers gave examples, such as a maths lesson in which pupils were asked to calculate the number of radishes they could plant in a certain area. They say that implementation of ideas and concepts involving agriculture are taken up more and greater interest is shown. In this particular school, pupils placed a strong emphasis on teachers being able to *'explain by giving illustrations and examples so that lessons can be easily remembered'*; they also mentioned that a good teacher *'uses different teaching methodologies'*. Generally parental attitudes were agreeable to such an approach. They appreciate their children telling them about their school work, particularly if parents also gain something from their children's schooling, for example new agricultural technologies or practices to improve general health. Where practices have been transferred to the community (e.g. vegetable growing and water filtration), it has proved to link the community with the school and has improved parental awareness of the importance of a basic education. Many teachers are past pupils of the school which appears to have helped in linking the school and community.

Agriculture as a subject was incorporated previously into curricula so resources for initiating a contextualised approach to teaching and learning, through the use of agricultural experience, are in abundance. As the majority of children come from agricultural backgrounds, and experience agricultural practices daily, it is an area extremely familiar to them. Parents' and teachers' attitudes to a contextualised approach to teaching and learning are very positive. Teachers already try to use pupils' experiences in their teaching practices but many feel they do not have sufficient training to enable them to use this knowledge effectively in teaching new concepts. The new curriculum is relevant to pupils' lives and does allow teachers to use their own examples and bring outside experiences into classroom learning. Despite the poor condition of schools and a general lack of resources, teachers state their main problem is insufficient training to enable them to implement the new curriculum.

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